Gold Standard for the Global Goals

TEMPLATE

KEY PROJECT INFORMATION & VPA DESIGN DOCUMENT (VPA DD)

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VERSION **v.2.3**

RELATED SUPPORT

- Programme of Activity requirements
- TEMPLATE GUIDE VPA Design Document

This document contains the following sections

KEY PROJECT INFORMATION

Type of VPA	☒ Real case VPA ☐ Regular VPA
Scale of VPA Note that a VPA can be of one scale. Please select applicable scale accordingly.	☐Microscale ☒Small scale ☐Large scale
Title of corresponding real case VPA (if applicable)	GS 12239 VPA-1 Amazi Meza Rwanda Water Supply Project For Schools
GS ID of real case VPA (if applicable)	GS12240
GS ID of VPA	GS12240
Title of VPA	GS 12239 VPA-1 Amazi Meza Rwanda Water Supply Project For Schools
Time of First Submission Date	01/12/2023
Date of Design Certification	Not certified yet
Version number of the VPA-DD	1.5
Completion date of version	20/11/2024
Coordinating/managing entity	Virridy Carbon LLC
VPA Implementer (s)	Virridy Carbon LLC
Project Participants and any communities involved	NA
Host Country (ies)	Rwanda
GS ID and Title of applicable Design Certified VPA	Not certified yet
GS ID and Title of applicable Performance Certified VPA	Not certified yet
Activity Requirements applied	☒ Community Services Activities

	☐ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A
Other Requirements applied	Programme of Activities Requirements and Procedures, version 2.1 Community Services Activity Requirements, version 1.2 GHG Emissions Reduction & Sequestration Product Requirements, version 2.3 Stakeholder Consultation And Engagement Requirements, version 2.1
Methodology (ies) applied and version number	Methodology For Emission Reductions From Safe Drinking Water Supply, v1.0
Product Requirements applied	☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A
VPA Cycle:	☒ Regular ☐ Retroactive

Table 1 – Estimated Sustainable Development Contributions

SUSTAINABLE DEVELOPMENT GOALS TARGETED	SDG IMPACT (DEFINED IN B.6.)	ESTIMATED ANNUAL AVERAGE	UNITS OR PRODUCTS
13 Climate Action (mandatory)	Amount of GHGs emissions avoided or sequestered	20,663[1]	tCO_2e
6 Clean water and sanitation	Proportion of population using safely managed drinking water services	100%	Proportion
7 Affordable and clean energy	Number of beneficiaries: Individuals	133,156	People
8 Decent Work and Economic Growth	Total number of jobs created (during Distribution and monitoring, and Evaluation)	11	Permanent Jobs

[1]

SECTION A. DESCRIPTION OF PROJECT

A.1. Purpose and general description of project

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According to the World Health Organization and the United Nations Children's Fund, unsafe water, along with poor sanitation and hygiene, are the main contributors to an estimated 4 billion cases of diarrhea disease annually (with nearly being 1.7 billion cases in children), causing 1.4 million deaths[2]. This project activity 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:

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

(ii) Avoid CO_2e emissions associated with water treatment.

(iii) The geographic location of the VPA (installation of the water fillers) is within the geographic boundaries within Host Country of Rwanda.

(iv) The baseline scenario is assumed to be that users would have boiled water for drinking in the absence of the project activity. Mostly, biomass is used as fuel for boiling water at the baseline scenario.

The project is managed and implemented by Virridy Carbon LLC, the Coordinating Management Entity (CME). Virridy, through its wholly owned subsidiary Virridy Rwanda LTD, will 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 (mostly, primary and secondary schools; other educational institutions can be included[3]) in approximately one thousand (1,000) schools countrywide as part of the whole programme; one hundred (100)

[2] World Health Organization, 2024. Diarrhoeal disease. Available at: https://www.who.int/news-room/fact-sheets/detail/diarrhoeal-disease
Triple Threat How disease, climate risks, and unsafe water, sanitation and hygiene create a deadly combination for children. New York: United Nations Children's Fund (UNICEF), 2023. Available at: https://www.unicef.org/media/137206/file/triple-threat-wash-EN.pdf
World Health Organization, 2014. Preventing diarrhea through better water, sanitation and hygiene. Available at: https://www.who.int/publications/i/item/9789241564823

[3] See more details below about the eligibility criteria for educational institution to join the grouped project.

schools included in the present VPA. The specific location of the schools and water purification systems are recorded including GPS coordinates.

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.

Schools are 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 installed are the LifeStraw® Community.

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[4].

The water purification systems 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 selected schools by the project activity for whom the common practice of water treatment for drinking is or would have been water boiling[5], 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 VPA location is Rwanda with the first project technologies installed on June 26, 2023. The VPA has been fully implemented and includes 1,273 LifeStraw®

[4] LifeStraw® Community specs. Available at: https://lifestraw.com/products/lifestraw-community
[5] For 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.

Community with a date of installation from 26/06/2023 to 23/02/2024.[6] The implementation of the PoA and the VPA is a voluntary action by the CME.

A.1.1. Eligibility of the VPA under approved PoA

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Table 1 Eligibility for VPA inclusion as per PoA requirements

NO.	ELIGIBILITY CRITERION	DESCRIPTION/ REQUIRED CONDITION	DESCRIPTION OF THE VPA IN RELATION TO THE CRITERIA, MEANS OF VERIFICATION AND SUPPORTING EVIDENCE FOR INCLUSION
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) are provided in a separate list titled "31_Filter Installation Database". Elementary/Secondary schools. The location of the Schools included in this VPA are submitted separately. All the schools included are located within Rwanda territory.

[6] Details are available in the file "31_Filter Installation Database".

2	Project technology and Target Users	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.	The VPA includes the installation of 1,273 LifeStraw® Community[7] Date of installation from 26/06/2023 to 23/02/2024 Details are available in the file "31_Filter Installation Database". The schools included in this VPA are: School Name(s) are provided in a separate list titled "31_Filter Installation Database".
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

[7] See product details in the manufacturer web pages. Available at: https://lifestraw.com/products/lifestraw-community

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. Details are available in the file "31_Filter Installation Database". (ii) The CME confirms this specific VPA is not part of an ETS[8], 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.
5	Legal ownership	Carbon rights waivers will be signed by schools and	1. Carbon waivers are signed by the schools,

[8] At the date of the validation of the VPA (20 November 2024), there is not an ETS operating in Rwanda, nor one under development, neither one under consideration. See ICAP ETS map available in the following link: (link opened on 20 November 2024): https://icapcarbonaction.com/es/ets

		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.	and are submitted to the VVB on a separate basis.
6	Project technology	All VPAs will include the installation of LifeStraw® Community (including a LifeStraw® Ultrafiltration Membrane). 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.
7	Additionality	All VPAs to be included under the PoA will be in compliance with item 1.1.3 of Annex B –	The CME confirms that the thermal energy savings per year at a unit level (i.e., per water

		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, or b. 600 tCO_2 emission reductions per year.	filter) is below 600 tCO_2e per year, and below 600 MWh of energy savings per year. The expected Emissions reductions are as follows: Part-time school 103 tCO_2e/y, Full-time school 147 tCO_2e/y, Boarding school 105 tCO_2e/y. The energy saving per unit is as follows: 45.146 MWh th/y[9]. See ERs spreadsheet.
8	Start date	All the project technologies are installed from June 26, 2023, onwards.	The VPA includes the installation of 1,273 LifeStraw® Community[10] Date of installation from 26/06/2023 to 23/02/2024
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.	Each school's eligibility criteria to be submitted to the VVB on a separate basis.

[9] 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.

[10] See product details in the manufacturer web pages. Available at: https://lifestraw.com/products/lifestraw-community

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.
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,

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

		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 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 tCO2e. See ERs spreadsheet (Virridy Forecast Ex-Ante ERs v3.3 07 Jun 24 VPA1.xlsx)

A.1.2. Legal ownership of products generated by the VPA and legal rights to alter use of resources required to service the project

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Virridy holds full and uncontested legal ownership of the emission reductions (GS VERs) generated by the project activity. The schools (project beneficiaries) and technology providers waive to the rights over the emission reductions and transfer them to Virridy. The ownership transfer has been discussed transparently as part of the stakeholder consultations and clearly stated in the agreements with the schools (project beneficiaries). The technology suppliers have signed a Carbon Credits assignment letter where it is stated that supplying the water treatment technology for Virridy Carbon Ltd. does not represent a partnership for the implementation and operation of the water treatment project, neither is considered as project participant of the carbon certified project.

All the schools agree to voluntarily participate in the project activity that enables the performance of the water filter over its lifetime, including the monitoring activities. The schools agree Virridy to claim the emission reductions from the use of the water filter technology and use the income from the carbon credits to finance the project. The project activity does not involve legal rights concerning changes in use of resources to service the project, for example, water rights.

Regarding the requirements detailed in the Gold Standard "GHG Emission Reductions & Sequestration Product Requirements", v2.3, Annex A – Requirements For Credits Authorised For Use Under Article 6 Of The Paris Agreement, as of now, there are no mandatory regulations or enforced caps in Rwanda for the use of voluntary carbon credits.

A.2. Location of VPA

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The geographic boundaries within which project technologies shall be installed are the political boundaries of the Host Country of Rwanda.

- Rwanda: 1.9403° S, 29.8739° E

The project activities are implemented in several schools of different districts in the following districts:

- Kamonyi
- Gakenke
- Musanze
- Muhanga.

The CME has recorded GPS coordinate of each filter installed. The detailed information about location of project technology is made available to the validator.

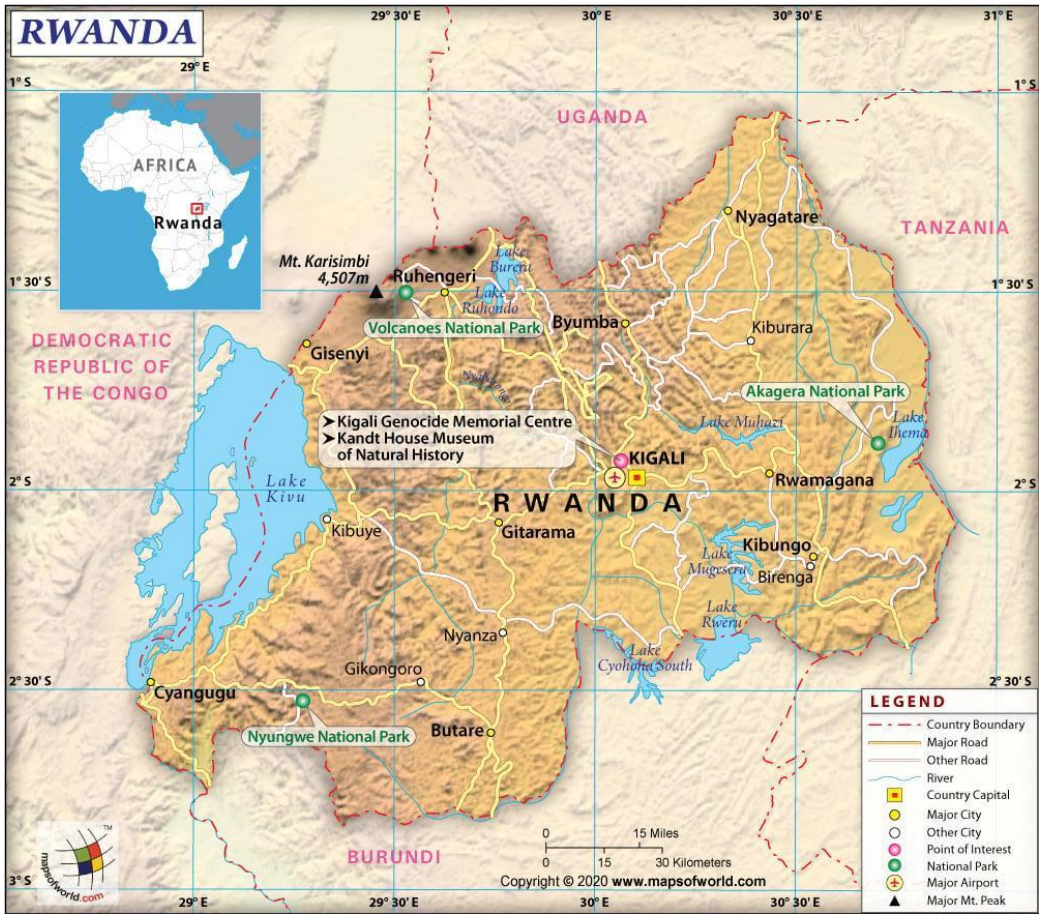

Figure 1. Host country map

The VPA is implemented in a location within the geographic boundaries of Rwanda.

A.3. Technologies and/or measures

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The technology employed is installed at schools where there is no public distribution network supplying SDW. In case a public distribution network exists, but is not supplying SDW, water quality testing is conducted to demonstrate that the water supplied from the public water network does not meet SDW standards.

The technology deployed includes an advanced water filtration technology:

- LifeStraw® Community

LifeStraw® Community

The LifeStraw® Community is a point-of-use microbiological water purifier intended for routine use in community, educational and institutional settings. It can serve four people simultaneously and includes a built-in 25-liter safe storage container. It includes a LifeStraw® Ultrafiltration Membrane with a lifetime[11] filtration capacity of 70,000 – 100,000 liters, which can be replaced. LifeStraw® water purifiers are 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. Additionally, the LifeStraw® Max has been certified under the Rwanda Standards Board (RSB) to meet national water quality standard.

LifeStraw® Community specs[12]:

LifeStraw® Community	
Dimensions (assembled)	558 x 558 x 850 mm (22” x 22” x 33.5” in)
Weight (without water)	8 kg (17 lbs)

[11] The LifeStraw® Community water purifier has an expected technical lifespan of 6 years, assuming periodic replacement of the membrane ultrafilter and cartridge filters, as specified by the manufacturer (Periodic replacement estimated: i.e., 100,000 L / (27.2 L/h * 8 hr day * 207 days) = at every 2.2 years. Three replacements = 6.6 years).
[12] Detailed information on LifeStraw® Community and LifeStraw® Ultrafiltration Membrane (such as Product Support Guide & FAQs, Performance Data Sheet, User Manual, Lab Information) can be found at the “Resources” section. Available at: https://lifestraw.com/products/lifestraw-community

Others	Uses no chemicals, thus leaves no bad taste or odor in purified water. **Does not require electrical power or batteries.**
Includes	LifeStraw® Membrane Ultrafilter

LifeStraw® Ultrafiltration Membrane specs[13]:

LifeStraw® Ultrafiltration Membrane	
Standards	WHO 3-star rating for comprehensive protection. Meets US EPA & NSF P231 drinking water standards for the removal of viruses, bacteria, and parasites. Meets NSF 42 standards for chlorine reduction. Meets NSF 53 standards for reduction of lead.
Removes	99.999999% of bacteria *(Brucella melitensis, Campylobacter jejuni, Francisella tularensis, Pseudomonas aeruginosa, Shigella, Staphylococcus aureus, Vibrio cholerae (Cholera), Vibrio parahaemolyticus, Yersinia enterocolitica, Yersinia pestis,* ***Enteropathogenic Escherichia coli (E. coli)****, Haemophilus influenzae, Klebsiella pneumoniae, Legionella pneumophila, Mycobacterium tuberculosis, Mycoplasma pneumoniae, Burkholderia pseudomallei, Salmonella enterica, Salmonella typhi (Typhoid), Streptococcus pneumoniae, Streptococcus pyogenes, Leptospira).*

[13] Ibid

	99.999% of parasites *(Ascaris lumbricoides, Cryptosporidium spp., Entamoeba histolytica, Giardia intestinalis (Beaver Fever), Naegleria gruberi, Schistosoma mansoni, Taenia saginata).* 99.999% of viruses *(Adenoviridae, Astroviridae, Calicivirus, Enterovirus, Hepatovirus A (Hepatitis A), Influenzavirus, Norovirus, Human parainfluenza viruses (HPIVs), Paramyxovirus, Human parvovirus B19, Rhinovirus, Rotavirus, Alphavirus, Rubivirus (Rubella))* 99.999% of microplastics
Reduces	Turbidity (silt, sand, cloudiness)
Pore size	0.02 micron
Filtration rate	2.5 L / min.
Lifetime	Filters 70,000-100,000 liters over its lifetime. The LifeStraw® Ultrafiltration Membrane can be replaced.
Safety	**When the purifier reaches the end of its lifetime, the membrane clogs naturally, thus eliminating the possibility of anyone drinking contaminated water.**

Figure 2. LifeStraw® Community

A.4. Scale of the VPA

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This is a small-scale project activity. The quantification impact methodology[14] applied ("GS Methodology For Emission Reductions From Safe Drinking Water Supply" version 1.0) describes the small scale. 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. The details of how the project does not overcome the small-scale threshold are provided in section B.6.3 below.

This is a small-scale VPA project applying the suppress demand approach. More information regarding the definition of the baseline scenario and the suppress demand approach is provided in section B.5 of this VPA-DD.

A.5. Funding sources of VPA

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The VPA does not receive public funding, this is a voluntary initiative lead by Virridy. No ODA funding shall be used for the VPA, as confirmed by the signed Official Development Assistance (ODA) Declaration submitted to the Gold Standard as part of the project documentation.

[14] Reference to GS4GG "Principles and Requirements" version 1.2, and "GHG emission reductions & sequestration product requirements" version 2.3, where the small scale is defined in the footnote 14 of paragraph 3.4.2 of the methodology applied.

SECTION B. APPLICATION OF APPROVED GOLD STANDARD METHODOLOGY (IES) AND/OR DEMONSTRATION OF SDG CONTRIBUTIONS

B.1. Reference of approved methodology (ies)

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Selected GHG baseline and monitoring methodology: GS Methodology For Emission Reductions From Safe Drinking Water Supply, v1.0

Other applicable tools:

- CDM Methodological Tool 30 "Calculation of the fraction of non-renewable biomass" version 4.0
- Guidelines for sampling and surveys for CDM project activities and programmes of activities, version 04.0

Other rules observed:

APPLICATION OF SUPPRESSED DEMAND, PROJECT TYPE AND APPLICABLE SCALE THRESHOLD (RU 2020 PR- GHG V1.2)

B.2. Applicability of methodology (ies)

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The table below list each of the methodology applicability criteria and explains how the VPA complies with those criteria:

Methodology's Eligibility Criteria		
Paragraph	**Criterion**	**Project activity justification**
§ 2.2.1 (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).

§ 2.2.1 (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).	NA, the project does not include CWS activities.
§ 2.2.1 (c)	All projects involving CWT and CWS technologies must also include ongoing maintenance and repair of the project technology.	NA, the project does not include CWT, nor CWS. However, the project provides maintenance and repair for the project technology.
§ 2.2.1 (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.	NA, the project does not include rehabilitation of an existing technology.
§ 2.2.1 (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.
§ 2.2.1 (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	NA, the project does not include CWT, nor CWS.

	of walking or pedaling may be demonstrated.	
§ 2.2.1 (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.[15] The technologies are also tested and approved for use in Rwanda by the Rwanda Bureau of Standards.
§ 2.2.1 (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: i. 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	NA, the project does not include CWT, nor CWS activities.

[15] Additional Filtration Specifications: Meets US NSF/ANSI P231 drinking water standards for the reduction of viruses, bacteria and parasites, Meets the highest drinking water requirements for WHO and US EPA. Further details on Lab information can be found in the following link (opened on 07 Jun 2024): https://cdn.shopify.com/s/files/1/2631/0778/t/4/assets/LifestrawCommunity-EvidenceDossier-1544004763279.pdf?602174293261732367 8SSIER%20(PDF)

	from the Guidelines for drinking-water quality (Table 7.10, WHO, 2017) 10; and ii. 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.	
§ 2.2.1 (i)	The project must conduct annual water hygiene education campaigns for the end-users.	The annual water hygiene education campaign for end-users includes the following aspects: - Access to sanitation amenities, equipment and infrastructure, and the behavioral use of such amenities, including prevention of infections from water-related diseases. - The hygiene campaigns are 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).
§ 2.2.1 (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.

B.3. VPA boundary

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The VPA boundary aligns with the section 3.1 of the applied methodology, and includes[16]:

- The physical, geographical sites of the low/zero-greenhouse gas emitting technologies to treat safe drinking water installed by the project activity (in this case schools);
- The household, commercial and institutional buildings where the end users of safe water provided by the project are located.

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. The table below describes the sources and gases included in the project boundary.

	Source	GHGs	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
		CH_4	Yes	Major source of emissions
		N_2O	Yes	Major 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

[16] The VPA boundary does not include back-up engines or other equipment using fossil-fuel related to the low greenhouse gas emitting technologies, neither electricity consumption from the grid. These emission sources are excluded from the boundary.

Project scenario	Emission 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 diagram below exemplifies the project boundary considered for the present VPA.

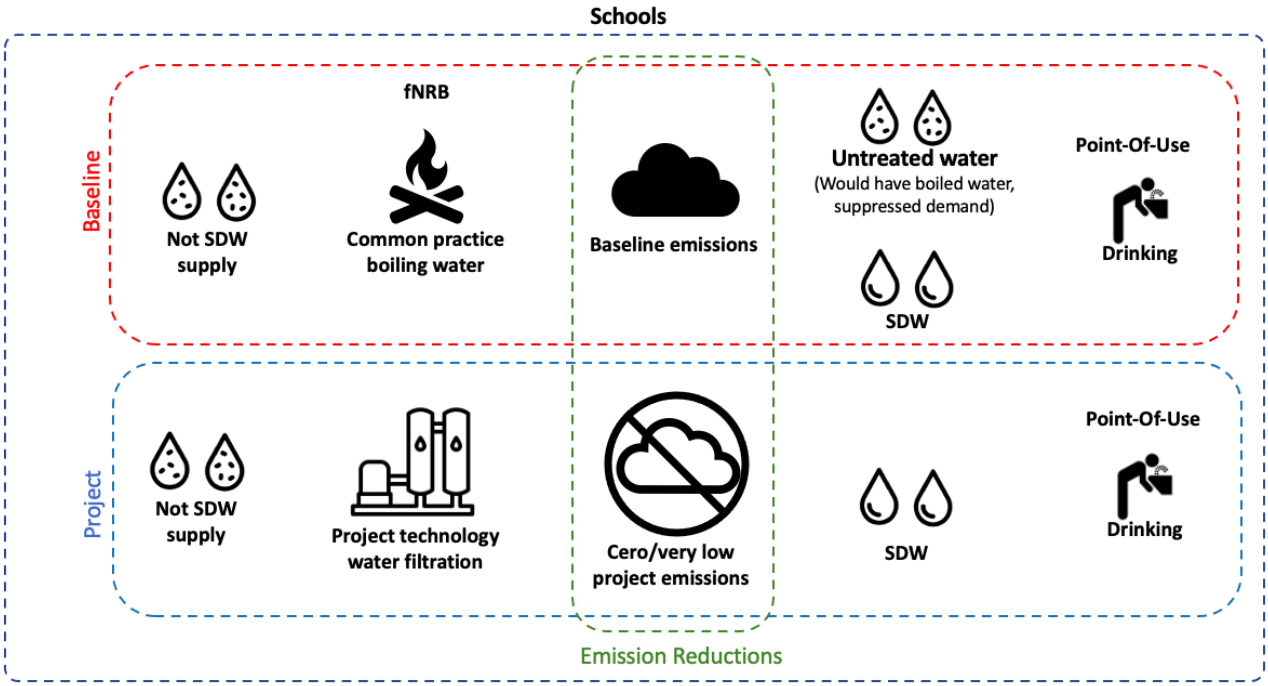

Figure 3. Project boundary diagram

B.4. Establishment and description of baseline scenario

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As per § 3.4.1 of the applied methodology, users that boil unsafe water for drinking in the pre-project scenario, the general baseline scenario is that they would have boiled water for drinking in the absence of the project activity. For the present VPA, the target population is schools that use either three stone fired wood stove, traditional

biomass cookstove, or other kind of stoves. Specific efficiencies are assigned based on the biomass stove types. The biomass used as fuel for boiling water at the baseline scenario is calculated based the stove type used.

As per §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 for 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 does not meet the safe water definition. The present VPA is a small-scale activity, therefore, it is eligible to apply the suppress demand approach. For schools connected to a PDN, it is demonstrated the water supplied does not meet SDW definition.[17]

Following what the applied methodology states regarding the baseline scenario and in line with the paragraph 3.4.2 summarized above, 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). Projects applying the suppressed demand baseline shall take into account any general rules or guidelines for suppressed demand published by the Gold Standard at the time of registration and crediting period renewal, as applicable.

National sectoral policies

[17] The schools included in this VPA are not connected to PDN. Furthermore, the CME has ran water quality tests at the baseline scenario and all the schools included in this VPA reported at least one water source as not safe. It demonstrate water consumed is not considered SDW.

The proposed project activity does not overlap, displace or is considered redundant to the main national sectoral policies for mitigation of GHG. For example, the Rwanda NDCs[18] do not include planes to avoid emissions from boiling water. The CDM didn't identify a regulation or policy that prevents water boiling as purification method, neither found a policy that seeks the reduction of firewood consumption form cooking or water boiling.

Also, a review of the key references relating to the provision of safe drinking water in Rwanda reveal there are no mandatory laws or specific requirements in Rwanda to foster the installation of water filtration technologies.

The key references reviewed include:

- Rural Drinking Water Quality Management Framework (2019).[19]
- Rwanda Standard (RS EAS 12: 2014), Potable water – Specification (RSB 2014).[20]
- National Water and Sanitation Policy (2023).[21]
- Water Law No. 62/2008[22]
- National Guidelines for Sustainable Rural Water Supply Services (2019).[23]

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 (i.e. baseline scenario) in the selected schools, because 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

[18] The Sectors covered by the NDCs are: energy; industrial processes and product use (IPPU); waste; and agriculture , forestry and other land use (AFOLU) but excluding sources from forestry and other land use. Information taken from NDC partntership available in the following link (link opened on 07 Jun 2024): https://ndcpartnership.org/country/rwa

[19] https://www.mininfra.gov.rw/fileadmin/user_upload/Mininfra/Documents/Water_and_Sanitation_docs/2_Rural_Drinking_Water_Quality_Framework.pdf

[20] Available in the Appendix 1 of the "Rural Drinking Water Quality Management Framework (2019)", which is the link right above of this footnote.

[21] https://www.mininfra.gov.rw/index.php?eID=dumpFile&t=f&f=93300&token=b5e6a9432df6bd9c46f607218d70699909842d20

[22] https://www.rwb.rw/fileadmin/user_upload/RWRB/Documents/Water_law_gazetted.pdf

[23] https://www.mininfra.gov.rw/fileadmin/user_upload/Mininfra/Documents/Water_and_Sanitation_docs/1_National_Guidelines_for_Sustainable_RWSS.pdf

and effective treatment of water, exposing communities, including the schools, to health risks.

Selection and justification of baseline scenario:

The drinking water sources, treatment methods and stove used at baseline scenario were defined applying a baseline survey. The baseline scenario selection and justification for the VPA is summarized below.

a. Pre-project practices of boiling water, or drinking unsafe water (suppressed demand): data from baseline survey

b. Efficiency of water boiling systems: data from baseline survey

c. Baseline fuels: data from baseline survey

Baseline survey Procedure

following the methodology requirements (§4.2.3), the baseline survey considered the minimum sample size:

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

The project population reached by the VPA is 154 schools, and the baseline survey was applied to the 100% of the schools, exceeding by far the minimum required (30 samples). It is worth mentioning that more schools (+600) were screened, but only those fulfilling the programme inclusion criteria have been included in the baseline assessment.

The "Guidelines for sampling and surveys for CDM project activities and programmes of activities" version 04.0 was followed to define the sampling approach for the baseline survey.

A minimum of 90% confidence interval and a 10% margin of error requirement shall be achieved for the sampled parameters.

Sampling Design

Objectives and reliability requirements: The baseline survey provides critical information on target population characteristics, baseline technology use (stove, other treatment methods), fuel consumption, leakage, 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.

Target population: The target population is educational institutions, mostly primary and secondary schools. 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.

Sampling method: The target population was assessed considering accessibility and relevant authorities' permission, e.g., Ministry of Education of Rwanda (MINEDUC) and Schools representatives for selecting areas. Once authorities granted their consent and support, the local management staff proceeds with the random selection of the schools. Given the homogeneity of the target population in terms of water consumption, the simple random sampling is a suitable approach. In the other hand, provides enough chances to capture diversity in terms of the water source, stove type, and fuel consumed.

The baseline surveys were carried out between 16/05/2023 and 28/03/2024.

Baseline survey results

Water Sources	**%[24]**
Borehole or tubewell	1.0
rainwater collection	90.0
Eligible schools supplying water by utility	1.0
protected spring	85.0
unprotected spring	2.0

[24] May total more than 100% because schools can have more than one source

Table 1. Water sources.

Stove type	Efficiency	Percentage
3-stone	0.1	27.1
Imbabura	0.1	5.1
Muvero	0.1	35.6
Muvero (good conditions)	0.1	8.5
Rondereza	0.1	23.7

Table 2. Specific efficiency of the weighted average of baseline stove types[25].

As per published paper by Modern Energy Cooking Services and Energy 4 Impact[26], firewood accounts for 93% of the main fuel used for cooking while charcoal represents 6% of the main cooking fuel used in rural areas. With firewood and charcoal as the prevalent cooking fuels the use of traditional cooking technologies is also common in Rwanda. 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. This is in line with the source cited above (cross-check). For simplification proposes, it is assumed 100% of the schools use firewood.

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 does not meet safe water definition (parameter SDWS 12). In case a school is connected to a PDN, this will be accounted under parameter C_b (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).

The WHO/UNICEF Joint Monitoring Programme for water supply, sanitation and hygiene has published Progress on household Drinking water, sanitation and hygiene

[25] Specific information on the weighted average of stove types used are reported under parameter SDWS 11
[26] https://mecs.org.uk/publications/policy-and-market-review-for-modern-energy-cooking-in-rwanda/

2000 – 2020 according to which approximately 12% of Rwanda population was reportedly using safely managed drinking water services in 2020.[27]

Thus, this VPA installs Institutional Water Treatment (IWT) technologies to schools under the suppressed demand baseline approach. Therefore, 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.

The suppressed demand scenario is aligned with the threshold stablished in the GS Rule update 'APPLICATION OF SUPPRESSED DEMAND, PROJECT TYPE AND APPLICABLE SCALE THRESHOLD (RU 2020 PR- GHG V1.2)' which indicates that safe water technologies shall not exceed 60,000 tCO_2e per year in any year of the crediting period.

B.5. Demonstration of additionality

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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).	Community Services Activity Requirements (Version 1.2), paragraph 4.1.9 states the following: "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) i.e. 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.

[27] https://data.unicef.org/resources/progress-on-household-drinking-water-sanitation-and-hygiene-2000-2020/

	b) 600 tCO_2 emission reductions per year. (b) Projects located in LDC, SIDS, LLDC (c) Micro-scale projects"
Describe how the proposed VPA meets the criteria for deemed additionality.	This VPA is solely composed of isolated units where the users of the IWT are schools (institutions) and where each unit results in GHG emission not exceeding 600 MWh of energy savings per year or 600 ton of CO_2e in any year of the crediting period and are located in a LDC[28]. The VPA meets the criteria (a) and (b) as shown in the table below and is therefore deemed additional.

Below is shown the Additionality threshold demonstration for the water purification system per unit installed at the schools.. To calculate the ERs per device and to corroborate the threshold per purification system, the table below considers 1 as the number of project technologies in each premise.

Parameter	Description	Units	Traditional cookstoves - Wood	Source/Equations used
SEw,b,y	Specific energy required to boil water	KJ/L	3,608.30	SEw,b,y = 360.83/ηw
ηwb	Efficiency of the stoves for baseline water boiling (%). Weighted average of baseline stove types.	%	Type of stove / Proportion of stoves used / Default efficiency 3-stone / 27.1% / 0.1 Imbabura / 5.1% / 0.1 Muvero (carbon project) / 35.6% / 0.1 Muvero (non-carbon project) / 8.5% / 0.1 Rondereza / 23.7% / 0.1	Data from the baseline survey, calculated as per the methodology equation.

[28] https://www.un.org/development/desa/dpad/least-developed-country-category/ldcs-at-a-glance.html

xf	Proportion of fuel f used in the baseline (fraction determined based on an energy basis)	%	100%	Baseline Survey
$fNRB,f,y$	Fraction of biomass used in year y for baseline scenario b that can be established as non-renewable biomass	Fraction	0.8485	Calculated following the CDM Tool30.
EFp,i,CO2	CO2 emission factor of the fuel that is substituted or reduced	tCO_2/TJ	112	Methodology default
EFp,i,non-CO2	Non-CO2 emission factor of the fuel that is reduced	tCO_2/TJ	9.46	Methodology default
EFb	Emission factor for the use of fuel to obtain safe water in the baseline	tCO_2e/L	0.0003770	$EFb = SEw,b,y * \Sigma(xf * (EFb,f,CO2 * fNRB,f,y + EFb,f,nonCO2)) f \div 10^9$
QPWhh,p,y	Volume of drinking water per premises p per day in year y (L)	L/p/day	Part-time school: 1,325 Full-time school: 1,887 (Boarding school): 1,347	Calculated
QPWp	Volume of drinking water per person per day for premises type p (L)	L	Part-time school: 3 Full-time school: 4 (Boarding school): 4	Default
HNp,y	Number of individuals per premises type p in year y		Part-time school: 609 Full-time school: 867 (Boarding school): 619	Baseline Survey
qi	Capacity of the IWT individual project technology	L/h	27.2	Manufacturer's specifications
Up,y	Cumulative usage rate for technologies in project scenario p in year y	%	100%	Assumption/To be monitored
DNp,y	Number of individual project technologies in each project	-	Part-time school: 1 Full-time school: 1 (Boarding school): 1	Distribution database/Baseline survey

	premises type p in year yof [29]			
DPp,y	Days the project technology is present for end-users in the premises p in year y	-	207	Ministry of Education Rwanda
Qy	Quantity of safe drinking water provided by the project in year y	L	Part-time school 1,325 Full-time school 1,887 Boarding school 1,347	$Qy = \Sigma\ Np,y \times Up,y \times QPW,p,y \times DPp,y$
Cb	Proportion of project end-users who in the baseline were already using a safe water supply that did not require boiling	%	0	Baseline survey Assume this is zero because all schools have at least one contaminated water source and won't continue boiling after filter installation
Xcleanboil,y	Proportion of project end-users that boil safe water in the project year y	%	0	To be monitored
Mq,y	Modifier for the water quality in year y	Fraction	1	To be monitored
ER/filter unit	Emission reductions per filter	tCO_2/yr	Part-time school 103 Full-time school 147 Boarding school 105	Calculated

It is demonstrated that the Emission Reductions from each water purification system unit are way below the threshold of 600 tCO_2e.

>>

B.5.1. Prior Consideration

[29] To calculate the ERs per device and to corroborate the threshold per purification system, the number of project technologies in each premise is considered 1.

>>

As per Gold Standard "Principles and requirements" (v1.2), specifically according to paragraph 4.1.50, the requirements of Prior Consideration for a PoA/VPA are the following:

(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 project is regular[30] and the submission (01/12/2023) of the required documents for preliminary review was within one year of its start date (26/06/2023).

Thus, the VPA meets the requirements.

B.5.2. Ongoing Financial Need

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NA, the Ongoing Financial Need is only required at the time of renewal of the crediting period. This VPA-DD is submitted for design certification.

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[30] *Principles and Requirements v1.2, and Programme of Activity Requirements and Procedures v2.1, and Stakeholder Consultation and Engagement Requirements v2.1* state that Regular Projects are which the Stakeholder Consultation (1st round) has been conducted **before** the Project Start Date. The Project Stakeholder Consultation took place on June 23rd, 2023, and the project start date is June 26th, 2023; hence, this Project complies with the stakeholder consultation to be conducted **before** the start date of the project to be consider a Regular Project (NOT Retroactive).

As per GS *Stakeholder Consultation and Engagement Requirements v2.1*, the PoA Design Consultation timing requirement is to be conducted before the PoA first submission for Preliminary Review. The PoA Design Consultation took place on August 21st, 2023, and the Preliminary Review submission was December 1st, 2023; hence, the programme does comply with this requirement too. No GS document mentions that the PoA Design Consultation shall be conducted before the start date of the PoA to be a Regular PoA.

This project, PoA and VPA, are regular (not retroactive), as the stakeholder consultation (first round) was conducted before the start date of the project.

B.6. Sustainable Development Goals (SDG) outcomes

Relevant Target/Indicator for each applicable SDG

SUSTAINABLE DEVELOPMENT GOALS TARGETED	MOST RELEVANT SDG TARGET	SDG IMPACT **INDICATOR (PROPOSED OR SDG INDICATOR)**
13 Climate Action (mandatory)	13.2 Integrate climate change measures into national policies, strategies and planning	Amount of GHGs emissions avoided or sequestered
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 Target	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 & Evaluation)

B.6.1. Explanation of methodological choices/approaches for estimating the SDG Impact

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SDG 13

The VPA includes the installation of technologies that treat water on the premises of an institution (schools) to obtain safe water. The project is reducing GHG emission from the burning of non-renewable woody biomass for boiling water. The calculation method follows the procedures of the Gold Standard methodology "Emission reductions from Safe Drinking water supply" v 1.0. The quantification method for baseline, project, and leakage emissions are described below.

The baseline emissions shall be calculated as follows:

$$BEy = EFb \times (1 - Cb - Xcleanboil\ ,y\ ) \times Qy \times Mq,y$$

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 (%)
$Xcleanboil\ ,y$	=	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 shall be calculated as follows:

$$EFb = SEw,b,y * \sum_{f}(xf * (EFb,f,CO_2 * fNRB,f,y + EFb,f,nonCO_2))\ f \div 10^9$$

Where:

EFb	=	Emission factor for the use of fuel to obtain safe water in the baseline (tCO_2e/L)
SEw,b,y	=	Specific energy required to boil water (kJ/L), to be calculated as per the paragraph below
xf	=	Proportion of fuel f used in the baseline (fraction determined based on an energy basis)
$EFb,f,CO2$	=	CO_2 emission factor from use of fuel f (tCO_2/TJ)
$EFb,f,nonCO_2$	=	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.
$fNRB,f,y$	=	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 (SEw,b,y) is determined as follows, by calculating the energy input required to obtain 1 L of boiling water, including boiling and vaporization losses[31], and taking into account default or measured stove efficiency.

$SEw,b,y = 360.83/\eta wb$

Where:

[31] The previous version of TPDDTEC Annex 3 assumed that purifying water by boiling would require boiling water for 10 minutes. This assumption was revised to 5 minutes, following WHO technical information that less than 5 minutes of boiling is sufficient for inactivation of enteric bacteria (Technical Brief WHO/FWC/WSH/15.02, 2015).

360.83 = Default amount of energy required to obtain 1 L of water after 5 minutes of boiling from a first principles approach[32] kJ/l

The quantity of safe drinking water 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. Because this is a IWT project, Method 2 is applied.

Method 2 – HWT and IWT technologies

The quantity of safe drinking water provided by the project Qy is determined as follows:

$$Qy = \Sigma\ Np,y \times Up,y \times QPWhh,p,y \times DPp,y$$

Where:

Np,y	=	Number of premises type p with at least one project technology in year y
Up,y	=	Usage rate of the project technology by premises type p during year y (%)
$QPWhh,p,y$	=	Volume of drinking water per premises p per day in year y (L)
DPp,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 follows:

[32] This is calculated from the specific heat of water of 4.186 kJ/L °C, the difference between the initial and final water temperature assuming a start at 20°C and end at 100°C, evaporation of 1% of water during 5 minutes of boiling to obtain 1 L boiled water, and latent heat of water evaporation of 2260 kJ/L. Also, the latent heat required to boil one liter of water for five minutes is assumed to be equivalent to latent heat for the evaporation of 1% of the water volume.

$QPWhh,p,y$ = min ((qi × tp,y × DNp,y), ($QPWp$ × HNp,y))

Where:

qi	=	Capacity of the HWT or IWT individual project technology (L/h)
tp,y	=	Usage time of the project technology by premises type p in year y (h/day)
DNp,y	=	Average number of individual project technologies in each project premises type p in year y
$HNp,\_y$ _	=	Number of individuals per premises type p (e.g., household, school) in year y
$QPWp$ _	=	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.

Project emissions

The water purifiers do not use fossil fuel or electricity for filtration; thus, the project emissions would be zero.

PEy _= Project emissions in year y (t CO_2e/yr) = 0

Leakage

The potential leakages relating to the non-renewable woody biomass are assessed as follows.

Potential sources of leakages identified ex-ante:

1) 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 of 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.

2) 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[33] tonnes. The Commercial woody biomass consumption for energy applications (including institutional uses of woody biomass)[34] 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.

3) 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.

It is concluded that leakage is considered null and can be ignored for the calculation of the Emission Reductions.

Finally, as stated in the methodology (see § 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. Sources and magnitude of leakage emissions must be reassessed at the time of crediting period renewal.

[33] This is estimated based 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 Ex-Ante ERs calculation spreadsheet, tab 'Parameters', cells B94:D97.
[34] 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.

Emission reductions

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)

SDG 6

Baseline scenario

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.

Project situation

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

Net Benefit

The contribution to the SDG6 is Proportion of population using safely managed drinking water services, defined as follows:

Net benefit SDG6 = Proportion of usage of technology provided.

SDG 7

Baseline scenario

The use of water filtration technology in the baseline scenario is none or very limited.

Project situation

In the project situation, the number of premised supplying satisfactory level of safe water makes a difference against the baseline scenario.

Net Benefit

The contribution to the SDG7 is defined as the number of benefiaries using the project technology, defined as follows:

Net benefit SDG7 = Number of beneficiaries at the project - Number of beneficiaries at the baseline

SDG 8

Baseline scenario

In the absence of the project, no permanent jobs would be created for similar activities.

Project situation

In the project situation, the project employs local staff for the implementation, operation, and maintenance.

Net Benefit

The contribution of the VPA to SDG 8 is 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.

B.6.2. Data and parameters fixed ex ante

SDG13

a. Related to water quality

Parameter ID	**SDWS 2**
Data/parameter	Project technology description
Unit	NA
Description	<table><tr><th>Product</th><th>Manufacturer</th></tr><tr><td>LifeStraw Community</td><td>LifeStraw</td></tr></table>
Source of data	Manufacturer specifications
Value(s) applied	Further details can be found in section A.3 of this document.
Choice of data or Measurement methods and procedures	-
Purpose of data	-
Additional comment	This parameter is fixed ex-ante & shall be updated at CP renewal.

Parameter ID	**SDWS 4**
Data/parameter	Regulatory Framework for safe water supply
Unit	N/A
Description	East African Standard, Potable Water Specification, EAS 12: 2014 specifies the Microbiological requirements, Chemical and physical limits for quality of drinking water supplies.
Source of data	Rwanda Standard, East African Standard, Potable Water Specification, EAS 12: 2014

Value(s) applied	<table><tr><td>Type of microorganism</td><td>Potable water</td></tr><tr><td>Total Coliforms in 100 ml</td><td>0</td></tr><tr><td>E. coli in 100 ml</td><td>0</td></tr><tr><td colspan="2">Note: For each individual sample, coliform should be estimated in terms of the "Most Probable Number" in 100 ml of drinking water, which is often designated as MPN index or Coli index. Occurrence of E. coli (fecal coli) in consecutive samples, in less than 100 ml of drinking water is an indication of fecal pollution and hence a dangerous situation needing urgent rectification.</td></tr></table>
Choice of data or Measurement methods and procedures	-
Purpose of data	-
Additional comment	This parameter is fixed ex-ante & shall be updated at CP renewal.

Parameter ID	**SDWS 5**
Data/parameter	Water sources in the project boundary
Unit	N/A
Description	The water sources identified at the project boundary are classified as improved and unimproved. The baseline surveys are used to define water sources in detail a follows: <table><tr><th>Water Sources</th><th>%[35]</th></tr></table>

[35] May total more than 100% because schools can have more than one source

	Borehole or tubewell: 1.0 rainwater collection: 90.0 Eligible schools supplying water by utility: 1.0 protected spring: 85.0 unprotected spring: 2.0
Source of data	Baseline Survey
Value(s) applied	As per the baseline survey the water sources in project boundary are:
Choice of data or Measurement methods and procedures	Baseline survey is carried out in line with the methodology and described in section B.4
Purpose of data	For parameter C_b calculation
Additional comment	This parameter is fixed ex-ante & shall be updated at CP renewal.

b. Related to emission reductions

Parameter ID	**SDWS 6**
Data/parameter	Stove technologies used in the project boundary
Unit	NA
Description	The proportion of different stove types used in premises in the geographical area of the project. The project only covers one type of end-user: Schools institutional premise. The stoves are determined for this premise type.
Source of data	Baseline Survey
Value(s) applied	

Type of stove	Proportion
3-stone	27.1
Imbabura	5.1
Muvero	35.6
Muvero (good conditions)	8.5
Rondereza	23.7

Choice of data or Measurement methods and procedures	Section B.4 of this document explain how the baseline survey was conducted. The majority of the population surveyed is using traditional inefficient cookstoves consuming woody biomass. Only a few are using improved cookstoves.
Purpose of data	Calculation of baseline emissions
Additional comment	This parameter is fixed ex-ante & shall be updated at CP renewal.

Parameter ID	**SDWS 7**
Data/parameter	Expected technical life of project technology
Unit	Years
Description	The expected technical life of an individual project technology is defined in section A.3 of the VPA-DD. The details include the life of the different product types used.
Source of data	Manufacturer specifications
Value(s) applied	<table><tr><td>Product</td><td>Lifetime[36]</td></tr><tr><td>LifeStraw Community</td><td>6</td></tr></table>
Choice of data or Measurement methods and procedures	Manufacturer specifications
Purpose of data	Calculation of project life
Additional comment	In cases where the life span of the water purifier technologies is shorter than the crediting period of the PoA, the project proponent shall ensure that the units are replaced in order to continue claiming emission reductions.

[36] As specified by the manufacturer, considering periodic replacement of membrane ultrafilter and cartridge filters.

	There shall be measures in place to ensure that end users have access to replacement purification systems of comparable quality. The technology/equipment will be replaced prior to the life span so that end users can access the same level of water purification. If no replacement or retrofitting is provided, emission reduction claims are limited to the expected technical life.

Parameter ID	**SDWS 8**
Data/parameter	xf
Unit	Percentage of fuel f use in target population
Description	The proportion of each different cooking fuel f used in the project boundary by end-users: - % among the target population if a single fuel is used for water boiling. For example, the target population either uses wood or charcoal - 60% end users use wood and 40% charcoal. - Weighted average on energy basis, if multifuel situation exists within premise. For example, a household that uses 1000 kg fuelwood per year and 500 kg charcoal per year for cooking and water boiling uses 51.4% fuelwood and 48.6% charcoal on an energy basis. The project only covers one type of end-user: Schools institutional premise. The fuels used at stoves for this premise type are determined.
Source of data	Baseline survey
Value(s) applied	**Fuel** / **Percentage**[37] Biogas 1% Charcoal 1% Biomass 1% Wood 100%

[37] May total more than 100% because schools can have more than one type.

	For simplification, only wood is considered as fuel used.
Choice of data or Measurement methods and procedures	A baseline survey as detailed in section B.4 and the sampling plan using steps under section B 7.2 are followed.
Purpose of data	Calculation of baseline scenario
Additional comment	

Parameter ID	**SDWS 9**
Data/parameter	$EF_{b,f,CO2}$
Unit	tCO2/TJ
Description	CO2 emission factor arising from use of fuels in baseline scenario
Source of data	IPCC defaults for wood and charcoal, the following defaults derived from the IPCC shall be applied: Wood: 112 tCO2/TJ
Value(s) applied	Wood: 112
Choice of data or Measurement methods and procedures	Default methodology value for fuelwood is applied
Purpose of data	Calculation of baseline scenario
Additional comment	-

Parameter ID	**SDWS 10**
Data/parameter	EFb,f,non-CO2
Unit	tCO2e/TJ
Description	Non-CO2 emission factor from use of fuels, in case the baseline fuel is biomass or charcoal
Source of data	IPCC defaults for woody biomass, the following defaults derived from the IPCC shall be applied: AR5 GWP - Wood: 9.46 tCO2e/TJ

Value(s) applied	Wood: 9.46
Choice of data or Measurement methods and procedures	Default methodology value for woody fuel is applied
Purpose of data	Calculation of baseline scenario
Additional comment	-

Parameter ID	**SDWS 11**
Data/parameter	ηwb
Unit	%
Description	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.
Source of data	As per methodology Emission Reductions from Safe drinking water supply version 1.0, the following default values may be applied to calculate the weighted average of the water boiling efficiency in the project boundary: - Three-stone fire or a conventional system for woody biomass lacking improved combustion air supply mechanism and flue gas ventilation system, that is without either a grate or a chimney: default efficiency 10%. – Other conventional systems using woody biomass: default efficiency 20%. - Improved cookstoves: manufacturer specification, or if not available, default efficiency 30%.
Value(s) applied	

Type of stove	Default efficiency
3-stone	10%
Imbabura	10%
Muvero	10%
Muvero (good conditions/carbon project)	10%
Rondereza	10%

Choice of data or Measurement methods and procedures	Baseline survey
Purpose of data	Calculation of Baseline scenario
Additional comment	This parameter is fixed Ex-ante & shall be updated at CP renewal.

Parameter ID	**SDWS 12**
Data/parameter	Cb
Unit	Percentage
Description	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
Source of data	Baseline survey
Value(s) applied	0%
Choice of data or Measurement methods and procedures	Assume this is zero because all schools have at least one contaminated water source and won't continue boiling after filter installation
Purpose of data	Calculation of baseline emissions
Additional comment	The safe water sources and percentages shall be consistent with the information reported for parameter Water sources in the project boundary (SWDS 5).

Parameter ID	**SDWS 13**
Data/parameter	qi
Unit	Litres per hour
Description	Capacity of the institutional water treatment technology
Source of data	Manufacturer specifications
Value(s) applied	**Product** | **Capacity (L/h)**

	LifeStraw Community | 27.2
Choice of data or Measurement methods and procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	This depends on the water filtration device model. The capacity is fixed for each model introduced. The capacity of the water treatment technology will help in calculating the amount of water treated. This parameter is fixed Ex-ante & shall be updated at CP renewal.

Parameter ID	**SDWS 21**
Data/parameter	fNRB,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 04.0
Value(s) applied	84.85%
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 04.0).[38] Other reference documents: 2019 Refinement to IPCC 2006 Global Forest Resources Assessment 2020 Rwanda Global Forest Resources Assessment 2015 Forest Product Conversion Factors 2020

[38] Detailed calculation available in the document "8_fNRB Calculation v1.1", made available to the VVB.

	FAOSTAT on Forest Production and Trade (http://www.fao.org/faostat/en/#data/FO)
Purpose of data	Calculation of baseline scenario
Additional comment	The fNRB value will remain fixed during the crediting period. 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 woodfuel 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.

B.6.3. Ex ante estimation of SDG Impact

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The detailed ex-ante Emission Reduction Calculation Spreadsheet is submitted in a separate excel file. The essential calculations are explained below.

Calculation of SDG 13

Baseline emission calculation

The baseline emissions shall be calculated as follows:

$$BEy = EFb \times (1 - Cb - Xcleanboil\ ,y\ ) \times Qy \times Mq,y$$

BEy =

Where:

BEy	=	103 Part time schools 147 Full time schools 105 Boarding schools	Baseline emissions from the use of fuel to obtain safe water in the baseline (tCO_2e)
Cb	=	0	Proportion of project end-users who in the baseline were already using a safe water supply that did not require boiling (%)
$Xcleanboil\ ,y$	=	0	Proportion of project end-users that boil safe water in the project year y (%)
Qy	=	274,313 Part time schools 390,525 Full time schools 278,817 Boarding schools	Quantity of safe drinking water provided by the project in year y (L)
Mq,y	=	1	Modifier for the water quality in year y

The baseline emission factor shall be calculated as follows:

$$EFb = SEw,b,y * \sum_{f}(xf * (EFb,f,CO_2 * fNRB,f,y + EFb,f,nonCO_2))\ f \div 10^9$$

Where

EFb	=	0.0003770	Emission factor for the use of fuel to obtain safe water in the baseline (tCO_2e/L)
SEw,b,y	=	3,608.30	Specific energy required to boil water (kJ/L), to be calculated as per the paragraph below
xf	=	1	Proportion of fuel f used in the baseline (fraction determined based on an energy basis)
$EFb,f,CO2$	=	112	CO_2 emission factor from use of fuel f (tCO_2/TJ)
$EFb,f,non\ CO_2$	=	9.46	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.
$fNRB,f,y$	=	84.85%	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	=	100% wood	Index for baseline fuel types

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

$SEw,b,y = 360.83/\eta wb$

SEw,b,y	=	3,608.30	

Where:

360.83	=	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
ηwb	=	0.1	Efficiency of the stoves for baseline water boiling (%). Weighted average of baseline stove types.

The quantity of safe drinking water 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.

Method 2 – HWT and IWT technologies

In the case of HWT and IWT, the quantity of safe drinking water provided by the project Qy is determined as follows:

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

Q_y = 1,325 Part time schools + 1,887 Full time schools + 1,347 Boarding schools

Where:

Np,y	=	154 Total 150 Full time schools 4 Boarding schools	Number of premises type p with at least one project technology in year y
Up,y	=	1	Usage rate of the project technology by premises type p during year y (%)
$QPW_{,p,y}$	=	3 Part time schools 4 Full time schools 4 Boarding schools	Volume of drinking water per premises p per day in year y (L)
DPp,y	=	207	Days the project technology is present for end-users in the premises p in year y. MINEDUC 2021-2022 and 2022-2023 School Calendar: https://www.mineduc.gov.rw/index.php?eID=dumpFile&t=f&f=26973&token=25e04b17718bfdf251599175b5922b44e68478a6

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 follows:

$QPWhh,p,y$ = min (($qi \times tp,y \times DNp,y$), ($QPWp \times HNp,y$))

$QPW,p,y =$

1,325 Part time schools
1,887 Full time schools
1,347 Boarding schools

Where:

qi	=	27.2	Capacity of the HWT or IWT individual project technology (L/h)
tp,y	=	8	Usage time of the project technology by premises type p in year y (h/day)
DNp,y	=	6 Part time schools 9 Full time schools 6 Boarding schools	Average number of individual project technologies in each project premises type p in year y
HNp,y	=	609 Part time schools 867 Full time schools 619 Boarding schools	Number of individuals per premises type p (e.g., household, school) in year y. Primary and secondary students = 615; Primary and secondary staff = 17 MINEDUC Education_Statistical_Yearbook_2020_21: Mean individuals/school. Will be updated with surveys
$QPWp$	=	3 Part time schools 4 Full time schools 4 Boarding schools	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.

Parameter	Description	Units	Traditional cookstoves - Wood	Source/Equations used
SEw,b,y	Specific energy required to boil water	KJ/L	3,608.30	$SEw,b,y = 360.83/\eta w$
ηwb	Efficiency of the stoves for baseline water boiling (%). Weighted average of baseline stove types.	%	Type of stove: Proportion of stoves used: Default efficiency 3-stone: 27.1%: 0.1 Imbabura: 5.1%: 0.1 Muvero (carbon project): 35.6%: 0.1 Muvero (non-carbon project): 8.5%: 0.1 Rondereza: 23.7%: 0.1	Data from the baseline survey, calculated as per the methodology equation.

xf	Proportion of fuel f used in the baseline (fraction determined based on an energy basis)	%	100%	Baseline Survey
$fNRB,f,y$	Fraction of biomass used in year y for baseline scenario b that can be established as non-renewable biomass	Fraction	0.8485	Calculated following the CDM Tool30.
EFp,i,CO2	CO2 emission factor of the fuel that is substituted or reduced	tCO_2/TJ	112	Methodology default
EFp,i,non-CO2	Non-CO2 emission factor of the fuel that is reduced	tCO_2/TJ	9.46	Methodology default
EFb	Emission factor for the use of fuel to obtain safe water in the baseline	tCO_2e/L	0.0003770	$EFb = SEw,b,y * \Sigma(xf * (EFb,f,CO2 * fNRB,f,y + EFb,f,nonCO2)) f \div 10^9$
QPWhh,p,y	Volume of drinking water per premises p per day in year y (L)	L/p/day	Part-time school: 1,325 Full-time school: 1,887 (Boarding school): 1,347	Calculated
QPWp	Volume of drinking water per person per day for premises type p (L)	L	Part-time school: 3 Full-time school: 4 (Boarding school): 4	Default
HNp,y	Number of individuals per premises type p in year y		Part-time school: 609 Full-time school: 867 (Boarding school): 619	Baseline Survey
qi	Capacity of the IWT individual project technology	L/h	27.2	Manufacturer's specifications
Up,y	Cumulative usage rate for technologies in project scenario p in year y	%	100%	Assumption/To be monitored
DNp,y	Number of premises type p with at least one	-	Part-time school: 6 Full-time school: 9 (Boarding school): 6	Distribution database/Baseline survey

	project technology in year y			
DPp,y	Days the project technology is present for end-users in the premises p in year y	-	207	Ministry of Education Rwanda
Qy	Quantity of safe drinking water provided by the project in year y	L	Part-time school 1,325 Full-time school 1,887 (Boarding school) 1,347	$Qy = \Sigma\ Np,y \times Up,y \times QPW,p,y \times DPp,y$
Cb	Proportion of project end-users who in the baseline were already using a safe water supply that did not require boiling	%	0	Baseline survey Assume this is zero because all schools have at least one contaminated water source and won't continue boiling after filter installation
Xcleanboil,y	Proportion of project end-users that boil safe water in the project year y	%	0	To be monitored
Mq,y	Modifier for the water quality in year y	Fraction	1	To be monitored
ER	Emission reductions, for 154 schools	tCO_2/yr	20,663	Calculated

Fraction of non-renewable biomass calculation

The fraction of woody biomass that can be established as non-renewable is:

$$f_{NRB} = \frac{NRB}{NRB + RB}$$

Where

f_{NRB}	= 84.85%	Fraction of non-renewable biomass in the applicable area in the relevant period (fraction or %)
NRB	= 4,748,853	Quantity of non-renewable biomass consumed in the applicable area in the relevant period (tonnes)

RB	= 847,995	Quantity of renewable biomass that is available on a sustainable basis in the applicable area in the relevant period (tonnes)

$$NRB = H - RB$$

Where

H	= 5,596,849	Total consumption of woody biomass in the applicable area in the relevant period (tonnes)

The total consumption of woody biomass (H) is calculated using the following equation, accounting for all consumption within the applicable area (not only wood fuel but also timber and industrial consumption):

$$H = HW \times N + CE + NE$$

Where

HW	= 3,811,062	Average consumption of wood fuel per household, including fuelwood and charcoal, in the applicable area in the relevant period (tonnes//household)
CE	= 907,140	Commercial woody biomass consumption for energy applications (e.g. commercial, industrial or institutional uses of woody biomass in ovens, boilers etc.) that are extracted from forests or other land areas in the applicable area in the relevant period (tonnes)
NE	= 878,647	Commercial woody biomass consumption for non-energy applications (e.g. construction, furniture) that are extracted from forests or other land areas in the applicable area in the relevant period (tonnes)
N[39]	= 1	Number of households consuming wood fuel within the applicable area in the relevant period (number)

[39] "N" is already being considered in "HW"; hence 1 is used for inclusion in the formula

The quantity of renewable biomass available in the applicable area (RB) is estimated using the following equation:

$$RB = \sum MAI_{forest,i} \times (F_{forest,i} - P_{forest,i})) + \sum (MAI_{other,i} \times (F_{other,i} - P_{other,i}))$$

Where

$MAI_{forest,i}$	= 2.60	Mean Annual Increment of woody biomass growth per hectare in sub-category i of forest areas in the relevant period (tonnes/ha/yr)
$MAI_{other,i}$	= 2.60	Mean Annual Increment of woody biomass growth per hectare in sub-category i of other land areas in the relevant period (tonnes/ha/yr)
$F_{forest,i}$	= 276,000	Extent of forest in sub-category i in the relevant period (ha)
$F_{other,i}$	= 261,000	Extent of other land in sub-category i in the relevant period (ha)
$P_{forest,i}$	= 210,848	Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within forest areas (in sub-category i) in the relevant period (ha)
$P_{other,i}$	= 0	Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within other land areas (in sub-category i) in the relevant period (ha)
i	= -	Sub-category i of forest areas and other land areas

B.6.4. Summary of ex ante estimates of each SDG outcome

SDG 13

YEAR	BASELINE ESTIMATE	PROJECT ESTIMATE	NET BENEFIT
26/06/2023-25/06/2024	13,288	0	13,288
26/06/2024-25/06/2025	22,507	0	22,507
26/06/2025-25/06/2026	22,507	0	22,507
26/06/2026-25/06/2027	22,507	0	22,507
26/06/2027-25/06/2028	22,507	0	22,507
Total	103,315	0	103,315

Total number of crediting years		5	
Annual average over the crediting period	20,663	0	20,663

SDG 6

Portion of population using safely managed drinking water services:

Baseline estimate = 0% per year

Project estimate = 100% per year

Net benefit = 100% per year

SDG 7

Number of beneficiaries (individuals):

Baseline estimate = 0 per year

Project estimate = 133,156 per year

Net benefit = 133,156 per year

SDG 8

Total number of jobs:

Baseline estimate = 0 per year

Project estimate = 11 per year

Net benefit = 11 per year

B.7. Monitoring plan

B.7.1. Data and parameters to be monitored

SDG 13

a. Related to water quality

Parameter ID	**SDWS 18**
Data / Parameter	$M_{q,y}$
Unit	Fraction
Description	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
Source of data	Testing of water at the exits of the treatment technology for a representative sample of end-users
Value(s) applied	1
Measurement methods and procedures	-
Monitoring frequency	Annual sampling, and the first round of testing shall be conducted at least after six months from the start date.
QA/QC procedures	1. Laboratories used for water quality testing must be approved by local health authorities and/or have quality accreditation; and 2. The laboratory used must demonstrate that it has an adequate quality management plan in place which addresses both quality assurance and quality control test procedures. 3. Field testing kits also are eligible, e.g. based on Colony Forming Unit method or Most Probable Number method. To use the field testing kits the project shall meet the following requirements: a. Testing kits must be approved by national agency or meet standards set by relevant international organisation e.g. US-EPA, and b. Testing kits shall be tested for its accuracy and robustness prior to application for project level monitoring, whereby local

	or accredited laboratory shall conduct water quality tests using testing kits and a relevant ISO standard or an equivalent standard, in parallel with field testing kits. Follow 4.2 |General requirements for sampling of the methodology. The sampling results shall satisfy at minimum the 90/10 rule.
Purpose of data	To meet claims under SDG 6.1.1. Level of Service and Project contributions: Water quality
Additional comment	If the proportion of samples not meeting Safe Drinking Water Quality Standards exceeds a threshold, no emission reductions will be claimed for the corresponding monitoring period. Thresholds: - Project or VPA year 1: 20% - Project or VPA year 2: 15% - Project or VPA year 3 or above: 10% When the crediting period is renewed, the year number count continues, i.e. the second crediting period would encompass year 6, year 7, year 8, etc. Additionally, when the threshold is exceeded, the project shall provide an explanation for why this occurred and provide a remediation plan.

Parameter ID	**SDWS 19**
Data/parameter	SDG Claims:

SDG 13 Climate Action	Amount of GHGs emissions avoided or sequestered
SDG 6 Clean water and sanitation	Proportion of population using safely managed drinking water services
SDG 7 Affordable and clean energy	Number of beneficiaries: Individuals
SDG 8 Decent Work and Economic Growth	Total number of jobs

Unit

SDG 13 Climate Action	tCO2e
SDG 6 Clean water and sanitation	Proportion
SDG 7 Affordable and clean energy	People
SDG 8 Decent Work and Economic Growth	Permanent Jobs (Number)

Description	

SDG 13 Climate Action	Amount of GHGs emissions avoided or sequestered
SDG 6 Clean water and sanitation	Proportion of population using safely managed drinking water services
SDG 7 Affordable and clean energy	Number of beneficiaries: Individuals
SDG 8 Decent Work and Economic Growth	Total number of jobs

Source of data	

SDG 13 Climate Action	Emission Reductions Calculations
SDG 6 Clean water and sanitation	Installation Database
SDG 7 Affordable and clean energy	Installation Database
SDG 8 Decent Work and Economic Growth	Management Records (contracts)

Value(s) applied	

SDG 13 Climate Action	Amount of GHGs emissions avoided or sequestered	20,663 tCO2e Proportion
SDG 6 Clean water and sanitation	Proportion of population using safely managed drinking water services	100% People
SDG 7 Affordable and clean energy	Number of beneficiaries: Individuals	133,156 People
SDG 8 Decent Work and Economic Growth	Total number of jobs	11 Permanent Jobs

Choice of data or Measurement methods and procedures	

SDG 13 Climate Action	ERs calculated based on the GS METHODOLOGY FOR EMISSION REDUCTIONS FROM SAFE DRINKING WATER SUPPLY
SDG 6 Clean water and sanitation	Based on the Parameter $M_{q,y}$ SDWS18 following the GS METHODOLOGY FOR EMISSION REDUCTIONS FROM SAFE DRINKING WATER SUPPLY
SDG 7 Affordable and clean energy	Based on the Parameter $HNp_{,y}$ SDWS25 following the GS METHODOLOGY FOR EMISSION REDUCTIONS FROM SAFE DRINKING WATER SUPPLY
SDG 8 Decent Work and Economic Growth	Report from project director supported by the contracts.

Purpose of data	Calculation of the SDGs claim

Additional comment	Monitor of SDG 13, 6, 7, and 8

Parameter ID	**SDWS 20**
Data / Parameter	Water hygiene education campaigns
Unit	NA
Description	Hygiene campaigns carried out among project safe water end-users.
Source of data	Report of annual hygiene campaigns results
Value(s) applied	-
Measurement methods and procedures	The following guidelines apply for conducting these campaigns[40] - Hygiene refers to access to sanitation amenities, equipment and infrastructure, as well as to the behaviour in respect to regular and correct use of such amenities. It also refers to behaviour that prevents infections from water-related diseases. - The project developer shall report the activities conducted each year in a detailed "Report of annual hygiene campaigns results" and summarize the results in the project monitoring reports. - Any major changes in the health status of the water users as a result of contaminated water (e.g. an outbreak of water related disease) must be reported and, if relevant, a strategy put in place to address it through the subsequent hygiene campaign. - The detailed method used to assess hygienic handling of clean water must be provided with the PDD and verified by the VVB. - The details of the method should be adjusted to suit the circumstances of each project and also to suit learning year on year.

[40] Guidance on hygiene technologies, training, and surveys appropriate for rural communities and institutions in low-income areas can be found in many publications. Some examples are:
- "Safe Water Storage", Centres for Disease Control and Prevention, 2012
- "Water, Sanitation, and Hygiene Improvement, Training Package for the Prevention of Diarrheal Disease, Guide for Training Outreach Workers" USAID Hygiene Improvement Project, 2009
- "A manual on hygiene promotion", Water, Environment and Sanitation Technical Guidelines Series No. 6, United Nations Children's Fund (UNICEF). The London School of Hygiene and Tropical Medicine (LSHTM), 1999
- "Water, sanitation and hygiene standards for schools in low-cost settings", edited by John Adams, Jamie Bartram, Yves Chartier, Jackie Sims, World Health Organization, 2009

	The impacts of the hygiene campaign shall be assessed using the WHO/UNICEF Joint Monitoring Programme Core questions for drinking water and hygiene to determine the fraction of the households and institutions where Safe water and Hygiene practices are found to fulfill "safely managed" or "basic" requirements. In-person or telephone or by messaging (e.g. text, app) based survey shall be conduct covering all the JMP core questions for drinking water and core questions for hygiene. For sampling requirements, follow section 4.2 |General requirements for sampling, below. The JMP core questions for households, schools and health care facilities are available at https://washdata.org/monitoring/methods/core-questions
Monitoring frequency	Annual
QA/QC procedures	The fraction of the households where Safe water and Hygiene practices are found to fulfill "safely managed" or "basic" requirements is expected to increase over time as a result of the hygiene campaigns.
Purpose of data	Monitoring of SDG 6
Additional comment	-

b. Related to emission reductions

Parameter ID	**SDWS 22**
Data / Parameter	$Xcleanboil,y$
Unit	Percentage
Description	Proportion of project end-users that boil safe (treated, or from safe supply) water after installation of project technology in year y.
Source of data	Project survey
Value(s) applied	0 (ex-ante estimation)
Measurement methods and procedures	A project survey shall be carried out to determine the value using sampling plan as detailed in section B.7.2
Monitoring frequency	Annual
QA/QC procedures	-

Purpose of data	Calculation of baseline emissions
Additional comment	For sampling, follow section B 7.2 This parameter is also involved in the ERs calculations.

Parameter ID	**SDWS 24**
Data / Parameter	QPW_p
Unit	Liters/person/day
Description	Volume of drinking water per person per day for premises type p
Source of data	GS quantification methodology
Value(s) applied	- Full-day premises: 4 L/person/day - Boarding school: 4 L/person/day - Half-time premises: 3 L/person/day
Measurement methods and procedures	Option 1: Apply the default value per person. In the case of institutions, such as schools, the value should reflect the expected drinking water use per person while on the premises of the institution, in line with the following defaults: - Full-day premises: 4 L/person/day - Boarding school: 4 L/person/day - Half-time premises: 3 L/person/day
Monitoring frequency	-
QA/QC procedures	-
Purpose of data	Calculation of baseline scenario
Additional comment	This parameter is fixed Ex-ante & shall be updated at CP renewal. No sampling required.

Parameter ID	**SDWS 25**
Data / Parameter	$HN_{p,y}$
Unit	Number
Description	Number of individuals per premises type p in the project boundary in year y
Source of data	Baseline Survey

Value(s) applied	Average individual per school, including students and staff. Part-time school: 609 Full-time school: 867 (Boarding school): 619 Total **133,156** individuals considering 154 schools
Measurement methods and procedures	-
Monitoring frequency	Annual
QA/QC procedures	The value shall be cross checked with the project survey results carried out during first monitoring and a conservative value shall be applied during Performance review.
Purpose of data	Calculation of baseline emissions
Additional comment	Also applicable for the monitoring of SDGs 6 and 7

Parameter ID	**SDWS 28**
Data / Parameter	Np,y
Unit	Number
Description	Accumulated number of premises type p with at least one individual project technology in year y
Source of data	Distribution records
Value(s) applied	154
Measurement methods and procedures	Sales or distribution records to include: i. Date of sale/distribution ii. Geographic area of sale iii. Model/type of project technology sold iv. Quantity of project technologies sold School name, telephone number, and address.
Monitoring frequency	Annual
QA/QC procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	Units shall not be counted in Np,y after the end of their technical life, unless this is addressed by the measures

	to manage the cases where the expected technical life of the project technology is shorter than the crediting period, namely replacement or retrofit as described in the parameter SDWS 7. Also applicable for the monitoring of SDGs 6 and 7

Parameter ID	**SDWS 29**
Data / Parameter	Up,y
Unit	Percentage
Description	Usage rate of the project technology by premises type p during year y
Source of data	Project Survey of the premises using a project technology to determine the usage rate of the project technology during the year.
Value(s) applied	100% (Assumed for ex-ante calculation)
Measurement methods and procedures	- Option 1: In-person survey of project premises (e.g. households, schools) covering all topics outlined in Annex - 1. Households that show at least once-in-two-days use may be counted as users. The resulting fraction is multiplied by 100% to get Up,y. Where project technologies of different ages are being credited, the sample shall be representative of the distribution of project technology ages.
Monitoring frequency	Annual
QA/QC procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	The minimum sample size for IWT – for individual technology age group shall be determined considering the project technology type and in line with the sampling approach applied. For minimum sample size requirements for different sampling approach to align with the 'Guidelines for sampling and surveys for CDM project activities and programmes of activities, version 04.0'

Parameter ID	SDWS 30
Data / Parameter	tp,y
Unit	Hours per day
Description	Usage time of the project technology by premises type p in year y
Source of data	Based on official schools working hours defined by Ministry of Education Rwanda (click here)
Value(s) applied	Part-time: 6 Hours Full time: 8 Hours Boarding: 10 Hours
Measurement methods and procedures	NA
Monitoring frequency	-
QA/QC procedures	-
Purpose of data	Calculation of baseline emissions
Additional comment	The official working hours: 9:00am-5:00pm

Parameter ID	SDWS 31
Data / Parameter	DPp,y
Unit	Days
Description	Average days the project technology is present for end-users in the premises p in year y
Source of data	MINEDUC School Calendar[41]
Value(s) applied	207
Measurement methods and procedures	This parameter is based on the official data made public by the Ministry of Education
Monitoring frequency	Annual
QA/QC procedures	The days must also be limited by the number of school days in the period, taking into account weekends and holidays.

[41] MINEDUC 2021-2022 and 2022-2023 School Calendars available in the following link: https://www.mineduc.gov.rw/index.php?eID=dumpFile&t=f&f=26973&token=25e04b17718bfdf251599175b5922b44e68478a6

Purpose of data	Calculation of baseline emissions
Additional comment	-

Parameter ID	**SDWS 32**
Data / Parameter	DNp,y
Unit	Number
Description	Average number of individual project technologies in each project premises type p in year y
Source of data	Sales or distribution records.
Value(s) applied	Part-time school: 6 Full-time school: 9 (Boarding school): 6
Measurement methods and procedures	Based on the distribution records of "Quantity of project technologies installed", calculate the average number of project devices per premises.
Monitoring frequency	Annually
QA/QC procedures	NA
Purpose of data	Calculation of baseline emissions
Additional comment	The project only covers one type of end-users: institutions (schools)

Parameter ID	**SDWS 35**
Data / Parameter	LEy
Unit	tCO_2e per year
Description	Leakage emissions during year y
Source of data	Sources established by following Leakage emissions section
Value(s) applied	Null
Measurement methods and procedures	Assessment
Monitoring frequency	Every two years
QA/QC procedures	NA
Purpose of data	Calculation of leakage emissions
Additional comment	No specific parameters are defined for leakage assessment.

B.7.2. Sampling plan

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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, 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

Target population for the sampling

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 and Up,y_shall be used to report Proportion of population using safely managed drinking water services	Project
	SDG7	Number of beneficiaries: Individuals	Project
	SDG8	Total number of jobs created (during Distribution and monitoring, and Evaluation)	Project

The sampling design for the baseline survey is described in section B.4 of this document.

Sampling Design – Project Survey

Objectives and reliability requirements: 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.

Target population: The target population is educational institutions (schools) participating in the programme.

Sampling method: Given the homogeneity of the target population in terms of water consumption, the simple random sampling is a suitable approach. In the other hand, provides enough chances to capture diversity in terms of the water consumption. Then simple random sampling would be an appropriate method to estimate the proportion of water purifiers still in operation. 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, 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.

Sample sizes will be sufficient to ensure that the precision of the sample means/proportions are in accordance with the Guidelines and methodology applied, including an oversampling to ensure the desired results.

The use of random numbers generator is applied to prevent bias in the selection of the samples. The records identified and the random selection of samples will be saved to allow traceability. A full random approach may include high geographic dispersion of the samples. Whenever the location of sample selected is very remote or isolated,

the cost of visiting that sample is prohibitive (time and distance)[42], it can be replaced with another sample randomly chosen from a more accessible location.

Data collected: The monitoring periods will be identified to ensure frequency of monitoring is met.

The field visit to undertake the surveys include as minimum the following considerations:

- Vacation periods (Schools closed)
- Holidays
- Safety (including accessibility and weather)
- Anticipation of age-groups availability

Quality Assurance/Quality Control: The project uses technology to collect the data and process the information. The questions and data capturing are designed in order to avoid or minimize bias, omissions or mistakes. It includes data validation e.g., only numbers, minimum decimals, etc. and warnings to ensure only complete surveys can be saved. 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.

The local staff in charge of the field surveys is trained to ensure they understand the purpose of the exercise, follow the anticipated procedures, and develop communication skills to undertake the survey. Training material and training records will be kept.

[42] Consuming half-day or more to reach only one sample is not feasible in terms of the human resources and cost. This is why it is anticipated the opportunity to replace remote samples with more accessible samples. Given the homogeneity of the target population, the representativeness can be ensured.

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.

B.7.3. Other elements of monitoring plan

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Project database

The project database is managed electronically using specialized operating systems: mWater[43] and Salesforce. The questionnaires are also designed and managed with mWater. The database, survey records, and all the data collected include redundancy and backups to avoid data losses.

Management

Virridy Carbon LLC. office manages all activities related to carbon finance, certification and Gold Standard compliance, including the management of monitoring activities. Monitoring field activities are carry out by Virridy Rwanda LTD office in Kigali, Rwanda.

The management system covered in the PoA had already been implemented at the time of verification, including:

- Roles and responsibilities: Management hierarchy has been defined to ensure the proper project implementation and operation. The diagram below summarizes the roles and responsibilities of each involved entity in the programme.

[43] mWater is a leading, free operating system for WASH in low-resource regions. It is a flexible data management platform used in over 190 countries by utilities, governments, and civil society organizations.

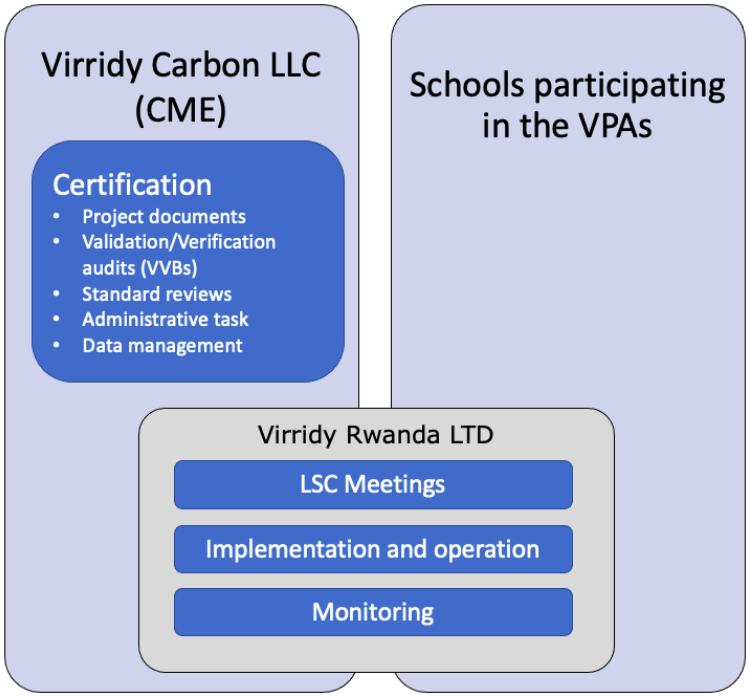

Figure 2. Roles and responsibilities

- Records and documentation control processes: Documentation is maintained as described in the PoA, with data collection performed from the Virridy Rwanda office; Gold Standard documentation and reporting are conducted from its U.S. office with support of a specialized consultant.
- Procedure to avoid double counting: Filters are identified with a unique asset ID created in the mWater electronic database at the time of installation. Each school is identified with a unique identifier and GPS coordinates. Only schools with no water treatment system in place for students are included in the programme.

The records, data and project supporting evidence will be kept[44] by the CME for at least two (2) year after the end of the crediting period.

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

Hygiene Campaign

When the filters are installed, the best location is decided along with the headmaster to ensure accessibility, basically all the filters are installed in the classrooms where students and teachers can take water on a free-demand basis. In all the cases, the schools staff including the headmaster, teacher and supporting staff receive a training how to clean and maintain the filters (e.g. filling and backwash). In some cases, students are also involved in the training. The project delivers instructions material and posters as part of the hygiene campaign. The headmaster appoints teachers or supporting staff as responsible to report daily cleaning and usage, some schools also record how many times each filter is refilled. Some schools organized «The Water Club» which invites students to participate in the daily cleaning routine of the filters in the classroom and remind classmates about the importance of drinking safe water and hygiene habits. Those reminders take place during the morning ceremonies and during classes.

During the training, contact details of project staff (on-field and office) are provided to ensure they can deliver comments, feedback, or report troubles with the filters. The project staff is responsible for ensuring the proper function including solving issues and replacing components.

SECTION C. DURATION AND CREDITING PERIOD

C.1. Duration of project

C.1.1. Start date of VPA

>>

26/06/2023

This is the date of installation of the first water filter. The evidence submitted to confirm the starting date of the project activity is:

- The first Memorandum of Understanding (MoU) signed;
- Installation database; and,
- The first installation record.

According to Principles and Requirements v1.2, and Programme of Activity Requirements and Procedures v2.1, and Stakeholder Consultation and Engagement Requirements v2.1 state that Regular Projects are which the Stakeholder Consultation (1st round) has been conducted before the Project Start Date. The Project Stakeholder Consultation took place on June 23rd, 2023, and the project start date is June 26th, 2023; hence, this Project complies with the stakeholder consultation to be conducted before the start date of the project to be consider a Regular Project (NOT Retroactive).

C.1.2. Expected operational lifetime of VPA

>>

15 years

C.2. Crediting period of project

C.2.1. Start date of crediting period

>>

26/06/2023

C.2.2. Total length of crediting period

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5 years renewable (26/06/2023 to 25/06/2028)

The crediting period can be renewed twice.

SECTION D. SUMMARY OF SAFEGUARDING PRINCIPLES AND GENDER SENSITIVE ASSESSMENT

D.1. Safeguarding Principles that will be monitored

A completed Safeguarding Principles Assessment is in Appendix 1, ongoing monitoring is summarized below.

PRINCIPLES	MITIGATION MEASURES ADDED TO THE MONITORING PLAN
NA	All the safeguarding principles from the Appendix 1 were considered and assessed, none was identified as relevant, applicable or with a potential risk identified. The technology used and the implementation methods followed uses conventional materials and methods. No mitigation measures are added to the monitoring plan.

In line with the GS Programme of Activity Requirements and Procedures, version 2.1, paragraph 5.5.1 and 5.5.2, the CME shall conduct the Safeguarding Principles Assessment at the real case VPA level, which is presented in this document; and, the CME shall select an option for the safeguarding assessment as inclusion criteria for its regular VPAs. The CME choses the 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.'

In line with the GS PoA Requirements and Procedures, paragraph 5.5.3, the table below provides the justification for the option chosen regarding safeguarding assessment:

Criteria	Justification
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.	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 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.
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.
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.
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.
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.
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 26/06/2026 want to follow the option (b), validation and approval by the VVB and GS respectively will be sought.

D.2. Assessment that project complies with GS4GG Gender Sensitive requirements

Question 1 - Explain how the project reflects the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	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.
Question 2 - Explain how the project aligns with existing country policies, strategies and best practices	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 contributes 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.

Question 3 - Is an Expert required for the Gender Safeguarding Principles & Requirements?	NA. The project aligns with the Safeguarding principles and requirements relating gender equality and women's empowerment. The project actually trains and employs women and part of the core team. Also, the beneficiaries of the project include women (students, teacher and supporting staff). The project does not include practices that represent risk (e.g. sexual harassment, violence, slavery, forced labor, restriction to resources, omission of ownership rights, etc.), neither jeopardizes women rights. Therefore, no expert opinion is sought.
Question 4 - Is an Expert required to assist with Gender issues at the Stakeholder Consultation?	NA. The Local Stakeholder Consultation Meeting included initiation and participation of women. No discrimination took place. During the meeting, women received equal treatment (e.g. same opportunities to express opinions and comments).

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.

SECTION E. SUMMARY OF LOCAL STAKEHOLDER CONSULTATION

Below is a summary of the two step GS4GG Consultation for monitoring purposes. Please refer to the separate Stakeholder Consultation Report for a complete report on the initial consultation and stakeholder feedback round.

The VPA level stakeholder consultation included a physical local consultation that took place on 23/06/2023[45] and was held on Lemigo Hotel, KG 624 Street, Kigali, Rwanda. Invitations in both Kinyarwanda and English along with all supporting documents including a non-technical summary of the project, feedback form and grievance mechanisms for providing feedback were shared one month in advance on 23/05/2023 to all identified stakeholders. The supporting documents were also attached to the 7th and 14th of June 2023 reminder emails which were sent to all stakeholders and not only those who had confirmed their attendance, ensuring that even those who were not able to attend were provided with the necessary context and information to engage in the feedback process.

This meeting followed the agenda detailed below.

- 08:00 - 08:30 Registration
- 08:30 - 08:45 Self-Introduction
- 08:45 - 09:00 Welcome and Introductions by the Project Developer
- 09:00 - 09:15 Project Background

[45] *Principles and Requirements v1.2, and Programme of Activity Requirements and Procedures v2.1, and Stakeholder Consultation and Engagement Requirements v2.1* state that Regular Projects are which the Stakeholder Consultation (1st round) has been conducted **before** the Project Start Date. The Project Stakeholder Consultation took place on June 23rd, 2023, and the project start date is June 26th, 2023; hence, this Project complies with the stakeholder consultation to be conducted **before** the start date of the project to be consider a Regular Project (NOT Retroactive).

As per GS *Stakeholder Consultation and Engagement Requirements v2.1*, the PoA Design Consultation timing requirement is to be conducted before the PoA first submission for Preliminary Review. The PoA Design Consultation took place on August 21st, 2023, and the Preliminary Review submission was December 1st, 2023; hence, the programme does comply with this requirement too. No GS document mentions that the PoA Design Consultation shall be conducted before the start date of the PoA to be a Regular PoA.

This project, PoA and VPA, are regular (not retroactive), as the stakeholder consultation (first round) was conducted before the start date of the project.

- 09:15 - 09:30 Proposed Solution - Amazi Meza Program
- 09:30 - 09:45 Questions and Answers
- 09:45 - 10:15 Coffee Break
- 10:15 - 11:00 Social, Environmental and Ecological Impacts of the Project
- 11:00 - 11:45 Questions and Answers
- 11:45 - 12:00 Closing: Feedback Form & Continuous Grievance Mechanisms
- 12:00 - 13:30 Lunch and Payment of transportation Facilitation

The stakeholder feedback round lasted two months, ending on 22/08/2023. No feedback was received during this period.

Further details of this consultation can be found in the file '5_GS12240_VPA Stakeholder-Consultation-Report_v1.0 30Nov2023.docx'.

Additionally, a PoA stakeholder consultation virtual meeting was held on 21/08/2023. This consultation was an opportunity for all interested parties to learn about the programme of activities and provide feedback on the programme design. Also, the participants had the opportunity to express their doubts and receive a response from the CME. Further details of this consultation can be found in the file '2_GS12239_PoA Design-Consultation-Report'.

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. For example, since its inception, the project has approached district administrators and school leadership to sign collaboration agreements with Virridy for the project implementation, serving as means to obtain feedback and acceptance. Another example is that the project provided transportation support (financial and logistics) to attend the physical meeting to participants traveling from outside Kigali, including reimbursement for transportation costs at the end of the meeting. Stakeholders that were not able to attend the physical meeting had also the possibility to join in a later date the virtual meeting.

E.1. Summary of stakeholder mitigation measures

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The details of the LSC are provided in the Local Stakeholder Consultation Report submitted to the VVB. However, there were no comments or feedback from the stakeholders which requires mitigation measures.

E.2. Final continuous input / grievance mechanism

METHOD	INCLUDE ALL DETAILS OF CHOSEN METHOD (S) SO THAT THEY MAY BE UNDERSTOOD AND, WHERE RELEVANT, USED BY READERS.
Continuous Input / Grievance Expression Process Book (mandatory)	The inputs and grievance process book is located at KK 15 Road Silverback Mall, Third Floor, Unit Number SB1-313. Kigali, Rwanda.
GS Contact (mandatory)	help@goldstandard.org
Other	Jean Ntazinda jean.ntazinda@virridy.com

SECTION F. Eligibility and inclusion criteria for VPAs inclusion

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The below table shall be completed for all VPAs.

The CME shall provide a clear description on how eligibility criteria set at real case VPAs are complied with for each real case and regular VPAs submitted for inclusion.

The CME shall not change the eligibility criteria and required conditions set at real case VPAs. At the time of inclusion of regular VPAs, the CME shall only describe how the regular VPAs comply with the eligibility criterion.

NO.	ELIGIBILITY CRITERION	DESCRIPTION/ REQUIRED CONDITION	DESCRIPTION OF THE VPA IN RELATION TO THE CRITERIA, MEANS OF VERIFICATION AND SUPPORTING EVIDENCE FOR INCLUSION
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) are provided in a separate list titled "31_Filter Installation Database". Elementary/Secondary schools. The location of the Schools included in this VPA are submitted separately. All the schools included are located within Rwanda territory.

2	Project technology and Target Users	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.	The VPA includes the installation of 1,273 LifeStraw® Community[46] Date of installation from 26/06/2023 to 23/02/2024 Details are available in the file "31_Filter Installation Database". The schools included in this VPA are: School Name(s) are provided in a separate list titled "31_Filter Installation Database".
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.

[46] See product details in the manufacturer web pages. Available at: https://lifestraw.com/products/lifestraw-community

			The CME supervise that procedure required by the applied methodology are followed. The VPA clearly states the methodology and version applied.
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	(i) Unique ID numbers assigned to the water systems installed are submitted to the VVB on a separate basis. Details are available in the file "31_Filter Installation Database". (ii) The CME confirms this specific VPA is not part of an ETS[47], 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.

[47] At the date of the validation of the VPA (20 November 2024), there is not an ETS operating in Rwanda, nor one under development, neither one under consideration. See ICAP ETS map available in the following link: (link opened on 20 November 2024): https://icapcarbonaction.com/es/ets

		will not be part of another Gold Standard or CDM project activity or VPA under another PoA.	
5	Legal ownership	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 ownership of the emission reductions lies with the CME.	1. Carbon waivers are signed by the schools, and are submitted to the VVB on a separate basis.
6	Project technology	All VPAs will include the installation of LifeStraw® Community (including a LifeStraw® Ultrafiltration Membrane). 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.
7	Additionality	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, or b. 600 tCO_2 emission reductions per year.	The CME confirms that the thermal energy savings per year at a unit level (i.e., per water filter) is below 600 tCO_2e per year, and below 600 MWh of energy savings per year. The expected Emissions reductions are as follows: Part-time school 103 tCO_2e/y, Full-time school 147 tCO_2e/y, Boarding school 105 tCO_2e/y. The energy saving per unit is as follows: 45.146 MWh th/y[48]. See ERs spreadsheet.
8	Start date	All the project technologies are installed from June 26, 2023, onwards.	The VPA includes the installation of 1,273 LifeStraw® Community[49]

[48] 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.

[49] See product details in the manufacturer web pages. Available at: https://lifestraw.com/products/lifestraw-community

			Date of installation from 26/06/2023 to 23/02/2024
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 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	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

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 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 tCO2e. See ERs spreadsheet Evidence for inclusion: See ERs spreadsheet (Virridy Forecast Ex-Ante ERs v3.3 07 June 24 VPA1)

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.

APPENDIX 1 - SAFEGUARDING PRINCIPLES ASSESSMENT

Complete the Assessment below and copy all Mitigation Measures for each Principle into SECTION D above. Please refer to the instructions in the Guide to Completing this Form below.

SOCIAL SAFEGUARDING PRINCIPLES		
Reference requirement	Question	Response
P.1 |HUMAN RIGHTS		
P.1.1.1 |	Does the project developer, its representatives and the Project disrespect internationally proclaimed human rights?	☐ YES ☒ NO
P.1.1.1 |	Is the project involved or complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights?	☐ YES ☒ NO
P.1.1.2 |	Have local communities or individuals raised human rights concerns regarding the project (e.g., during the stakeholder engagement process, grievance processes, public statements)?	☐ YES ☒ NO
P.1.1.3 |	Is there a risk that rights-holders (e.g., Project-affected stakeholders) do not have the capacity to claim their rights?	☐ YES ☒ NO
P.1.1.3 |	Does this project undermine national or regional measures for the realisation of the right to development?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.		
NA		
Would the project potentially involve or lead to:		
P.1.1.1 |	adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalised groups?	☐ YES ☐ POTENTIALLY ☒ NO
P.1.1.2 |	inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalised or excluded individuals or groups, including persons with disabilities?	☐ YES ☐ POTENTIALLY ☒ NO
P.1.1.3 |	restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalised individuals or groups, including persons with disabilities?	☐ YES ☐ POTENTIALLY ☒ NO

P.1.1.3 |	exacerbation of conflicts among and/or the risk of violence to project-affected communities and individuals?	☐ YES ☐ POTENTIALLY ☒ NO

Briefly describe below how the project incorporates a human rights-based approach.
For example, by describing how the project design:

- is informed by human rights analysis, including from UN human rights mechanisms (human rights treaty bodies, universal periodic review, special procedures)
- includes measures to assist the government to realise (respect, protect and fulfil) human rights under international law and to implement human rights-related standards in national law (whichever is higher)
- enhances the availability, accessibility and quality of benefits and services for potentially marginalised individuals and groups, and to increase their inclusion in decision-making processes that may impact them (consistent with the non-discrimination and equality human rights principle)
- provides reasonable accommodations to strengthen inclusivity and accessibility of project benefits and services to persons with disabilities.

The project is implemented respecting internationally proclaimed human rights and is not complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights. The project does not discriminate with regard to participation and inclusion as the efficient project stoves are freely distributed to the families selected in collaboration with the representatives of the local communities

P.2 |GENDER EQUALITY AND WOMEN'S EMPOWERMENT

P.2.1.1 |	Have women's groups/leaders raised gender equality concerns regarding the project, (e.g., during the stakeholder engagement process, grievance processes, public statements)?	☐ YES ☒ NO
P.2.1.2 |	Does the project undermine the principles of non-discrimination, equal treatment, and equal pay for equal work?	☐ YES ☒ NO
P.2.1.2 |	Does the project prevent men and women from having equal opportunities to participate in identified tasks and activities, whether through paid work, volunteer work, or community contributions, as appropriate?	☐ YES ☒ NO
P.2.1.2 |	Does the project limit the participation of women or men based on pregnancy, maternity/paternity leave, or marital status?	☐ YES ☒ NO
P.2.1.2 |	Is information about project objectives being communicated in a way that is inappropriate for the local context and not tailored to the methods of understanding of both women and men, which could hinder their participation?	☐ YES ☒ NO
P.2.1.3 |	Has the project assessed gender risks without referencing the country's gender strategy or equivalent national commitment?	☐ YES ☒ NO

P.2.1.4 |	Has expert stakeholder(s) been involved, and has their input been requested for the project design on gender equality and women's empowerment?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

N/A

Would the project potentially involve or lead to:		
P.2.1.1 |	adverse impacts on gender equality and/or the situation of women and girls?	☐ YES ☐ POTENTIALLY ☒ NO
P.2.1.1 |	exacerbation of risks of gender-based violence? For example, through the influx of workers to a community, changes in community and household power dynamics, increased exposure to unsafe public places and/or transport, etc.	☐ YES ☐ POTENTIALLY ☒ NO
P.2.1.2 |	reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	☐ YES ☐ POTENTIALLY ☒ NO
P.2.1.2 |	limitations on women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well-being.	☐ YES ☐ POTENTIALLY ☒ NO

Briefly describe below how the project is addressing any identified risk to gender equality and women's empowerment.

The project activity does not endorse or apply any form of discrimination based on gender. It is not foreseen that the project reduces or put at risk women's access to or control of resources, entitlements and benefits. Instead, as women are primarily responsible for firewood collection and cooking activities, they will have better control of resources (firewood and time is saved) and stand to benefit the most from possible health improvements caused by the reduced smoke inhalation during the cooking activities. It is also not foreseen that the Project would adversely affect men or women in marginalized or vulnerable communities. There is less burden on women, men and children, as no water boiling is required. This reduces the time burden on women and men working at schools' kitchens.

The Project takes into account gender roles and the abilities of women and men to participate in the decision/designs of the project activities. For example, the

Stakeholder Consultation included both women and men participating in the consultation meeting. The Project takes into account gender roles and the abilities of women and men to participate and benefit from the project activities. The project does not contribute to an increase in women's workload or prevent them from engaging in other activities. In fact, the project technology reduce the firewood needs for water boiling and will thereafter reduce workload related to this water traditional treatment. The project is not foreseen to reproduce or deepen discrimination against women. The project is not foreseen to limit women's ability to use, develop and protect natural resources. Instead, the use of the water filters reduce the firewood consumption and thereafter provide the possibility of saving local natural wood resources. The project activity does not expose women or girls to further risks or hazards. Instead, the risk related to waterborne diseases is foreseen to be reduced.

P.3 |COMMUNITY HEALTH AND SAFETY

P.3.1.1 |	Does the project involve potential risks to the health and safety of affected communities during its life cycle?	☐ YES ☒ NO
P.3.1.2 |	Does the project involve any potential risks to the workers' safety and health?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

NA

Would the project potentially involve or lead to:

P.3.1.1 |	construction and/or infrastructure development (e.g., roads, buildings, dams)?	☐ YES ☒ NO
P.3.1.2 |	air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 |	harm or losses due to failure of structural elements of the project (e.g., collapse of buildings or infrastructure)?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 |	risks of water-borne or other vector-borne diseases (e.g., temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?	☐ YES ☐ POTENTIALLY ☒ NO

P.3.1.2 |	transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g., explosives, fuel and other chemicals during construction and operation)?	☐ YES ☐ POTENTIALLY ☒ NO
P.3.1.2 |	adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g., food, surface water purification, natural buffers from flooding)?	☐ YES ☐ POTENTIALLY ☒ NO

Briefly describe below how the project is addressing any identified risk related to community health and safety.

The project activity does not expose the community to increased health risks and does not adversely affect the health of workers and the community. In fact, the water filters ensure water quality, thus improving health and hygiene.

P.4 |CULTURAL HERITAGE, INDIGENOUS PEOPLE, DISPLACEMENT AND RESETTLEMENT

P.4.1 |Sites of Cultural and Historical Heritage

P.4.1.1 |	Does the project involve altering, damaging, or removing sites, objects, or structures of significant cultural heritage?	☐ YES ☒ NO

If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

NA

Would the project potentially involve or lead to:

P.4.1.1 |	activities adjacent to or within a cultural heritage site?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1 |	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1 |	alterations to landscapes and natural features with cultural significance?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.1 |	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g., knowledge, innovations, practices)? (Note: projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.2 |	utilisation of tangible and/or intangible forms (e.g., practices, traditional knowledge) of Cultural Heritage for commercial or other purposes?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.1.2 |	If answer to question above is "YES" or "POTENTIALLY" - are the communities made aware of their right under the	☐ YES ☒ NO

	law, scope and nature of proposed development and its potential consequences?	☒ NA
P.4.1.3 |	If answer to question above is "YES" - does the project provide equitable sharing of benefits from commercialisation of such knowledge, innovation, or practice, consistent with their customs and traditions?	☐ YES ☐ NO ☒ NA
P.4.1.4 |	If answer to question above is "YES" - are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA
P.4.1.4 |	If answer to question above is "YES", has project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

The project activity does not include sites, structures or objects with historical, cultural, artistic, traditional or religious value or intangible forms of culture. The Project will provide water filters to schools in the project area and it does not require alteration, damage or removal of any historical, artistic, traditional, religious or cultural heritage issues.

P.4.2 |*Forced Eviction and Displacement*

P.4.2.1 |	Does the project involve any risks related to involuntary relocation of people?	☐ YES ☒ NO

If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

The project activity consists of installation of water filter at schools, no physical or economic relocation of peoples is involved.

Would the project potentially involve or lead to:

P.4.2.1 |	risk of forced evictions or involuntary relocation of people?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.2.2 |	temporary or permanent and full or partial physical displacement (including people without legally recognisable claims to land)?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.2.2 |	economic displacement (e.g., loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.2.2 |	If answer to question above is "YES" or "POTENTIALLY", - has the project developed Resettlement Action Plan or Livelihood Action Plan in consultation and	☐ YES ☐ NO ☒ NA

	agreement with affected individual, group or community? - has the project integrated Resettlement Action Plan or Livelihood Action Plan into the Project design?	
P.4.2.3 |	If answer to question above is "YES" - are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA
P.4.2.3 |	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NA

P.4.3 |LAND TENURE AND OTHER RIGHTS

P.4.3.1 |	Does the project involve any risks related to identifying and managing legitimate tenure rights that may be affected by the project?	☐ YES ☒ NO

If the answer to question above is "yes," please explain the reason and how the project will ensure compliance with applicable requirements.

NA

Would the project potentially involve or lead to:

P.4.3.1 |	impacts on or changes to land tenure arrangements and/or community-based property rights/customary rights to land, territories and/or resources?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.3.1 |	uncertainties with regards to land tenure, access rights, usage rights or land ownership? Examples include, but are not limited to water access rights, community-based property rights and customary rights.	☐ YES ☐ POTENTIALLY ☒ NO
P.4.3.2 |	Changes in legal arrangements, if yes, are the changes done in line with relevant laws and regulations?	☐ YES ☐ NO ☒ NA
P.4.3.2 |	Changes in legal arrangements, if yes, are these changes agree with free, prior and informed consent of the involved stakeholders?	☐ YES ☐ NO ☒ NA
P.4.3.3 |	Does some other entity (other than the project developer) hold uncontested land title for the entire Project Boundary?	☐ YES ☐ NO ☒ NA
P.4.3.4 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA

P.4.3.4 |	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☐ NO ☒ NA
P.4.3.5 |	Have project developer in consultation with stakeholders established a functioning mechanism to receive, process, resolve, communicate and record grievances?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NA

P.4.4 |INDIGENOUS PEOPLES

P.4.4.1 |	Does the project involve Indigenous People within the Project area of influence who may be affected directly or indirectly by the Project?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

There may be indigenous people present within the area of influence. The project does not disturb territory claimed by indigenous people.

Would the project potentially involve or lead to:

P.4.4.1 |	affect areas where indigenous peoples are present (including project area of influence)	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.1 |	affect areas, land and territory claimed by indigenous peoples?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.1 |	impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples?	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.7 |	If answer to above questions is ''YES'' or "POTENTIALLY", - Is it determined that the proposed project may affect the rights, lands, resources, or territories of indigenous people? - Has an "Indigenous People Plan" (IPP) or "Indigenous People Plan Framework" been elaborated and included in the project documentation? - Was the plan developed in accordance with the effective and meaningful participation of indigenous peoples and in accordance with UNDP Guidelines?	☐ YES ☐ NO ☒ NA
P.4.4.3 |	risk of forcibly removing indigenous people from their lands and territories?	☐ YES ☐ POTENTIALLY

		☒ NO
P.4.4.4 |	utilisation and/or commercial development of natural resources on lands and territories claimed by indigenous peoples? Consider, and where appropriate ensure, consistency with the answers under Principle 4.1 above	☐ YES ☐ POTENTIALLY ☒ NO
P.4.4.5 | P.4.4.6 |	If answer to question above is "YES" or "POTENTIALLY" - Did the project obtain free, prior and informed consent from indigenous people before taking their cultural, intellectual, religious, and/or spiritual property? - Does the project ensure that the indigenous people receive an equitable sharing of benefits resulting from the use of their traditional knowledge and practices? ? - Does the project ensure that the sharing of benefits resulting from the use of indigenous peoples' traditional knowledge and practices is culturally appropriate and inclusive? - Does the project ensure that the provision of equitable sharing of benefits does not impede land rights or equal access to basic services including health services, clean water, energy, education, safe and decent working conditions, and housing?	☐ YES ☐ NO ☒ NA
P.4.4.8 |	Does the project lack appropriate feedback and grievance channels for Indigenous Peoples and their representatives?	☐ YES ☐ NO ☒ NA
P.4.4.8 |	Has a grievance mechanism not been established at the beginning of programme or project implementation with due consideration given to customary dispute settlement mechanisms among the Indigenous Peoples concerned and will it remain operational throughout the project cycle?	☐ YES ☐ NO ☒ NA
P.4.4.9 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA
P.4.4.9 |	If answer to question above is "YES", have project design been changed, modified, updated considering opinions and recommendations of an Expert Stakeholder?	☐ YES ☐ NO ☒ NA
If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		

NA

P.5 |CORRUPTION

P.5.1.1 |	Does the project involve, or is it complicit in, contributing to or reinforcing corruption or corrupt projects?	☐ YES ☒ NO
P.5.1.1 |	Does the project have a risk of encouraging bribery, kickbacks, or other unethical behavior?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

The Project doesn't involve, is not complicit in, and does not inadvertently contribute to or reinforce, corruption or corrupt projects.

ECONOMIC SAFEGUARDING PRINCIPLES

P.6 |ECONOMIC IMPACTS

P.6.1 |LABOUR RIGHTS AND WORKING CONDITIONS

P.6.1.1 |	Does the project involve, facilitate, or condone forced labor, or pose a potential risk of forced labor?	☐ YES ☒ NO
P.6.1.1 |	Does the project violate any labor or health and safety laws, international obligations, or ILO conventions?	☐ YES ☒ NO
P.6.1.2 |	Does the project violate the principles of equal opportunity and fair treatment in its employment decisions?	☐ YES ☒ NO
P.6.1.3 |	Does the project violate national laws, if available regarding non-discrimination in employment?	☐ YES ☒ NO
P.6.1.4 | P.6.1.5 |	Does the project allow child labor?	☐ YES ☒ NO
P.6.1.7 | P.6.1.8 |	Does the project have insufficient processes and measures in place to ensure the safety and health of project workers?	☐ YES ☒ NO
P.6.1.9 |	Does the project have insufficient measures to safeguard and support vulnerable project workers, such as women, people with disabilities, migrant workers, and young workers, and to prevent any kind of harassment, abuse, bullying, or exploitation, including gender-based violence (GBV)?	☐ YES ☒ NO
P.6.1.10 |	Does the project have no grievance mechanism available for workers to voice workplace concerns? Is information about this mechanism not provided to workers at the time of recruitment, or is it not easily accessible?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

NA

Would the project potentially involve or lead to: (NOTE: APPLIES TO BOTH PROJECT AND CONTRACTOR WORKERS)		
P.6.1.1 |	use of forced labour?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	working conditions that do not meet national labour laws and international commitments?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	working conditions that may deny freedom of association and collective bargaining?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	absence of documented working agreements with all individual workers *if such agreements do not exist, or do not address working conditions and terms of employment, the project developer shall provide reasonable working conditions and terms of employment.*	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	use of migrant workers? *if engaged, the developer shall ensure that they are engaged substantially equivalent terms and conditions to non-migrant workers carrying out similar work.*	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.1 |	having no arrangements for basic services[50] for workers? *the project developer shall put in place and implement policies on the quality and management of the accommodation and provision of basic services in a manner consistent with the principles of non-discrimination and equal opportunity. Workers' accommodation arrangements should not restrict workers' freedom of movement or of association*	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.2 |	any form of discrimination or harassment based on factors unrelated to job requirements, such as gender, race, nationality, ethnicity, social or indigenous origin, religion or belief, disability, age, or sexual orientation?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.2 |	any form of discrimination in any aspect of employment, such as recruitment, compensation, working conditions, training, job assignment, promotion, termination, or discipline?	☐ YES ☐ POTENTIALLY ☒ NO

[50] Basic services requirements refer to minimum space, supply of water, adequate sewage and garbage disposal system, appropriate protection against heat, cold, damp, noise, fire, and disease-carrying animals, adequate sanitary and washing facilities, ventilation, cooking and storage facilities and natural and artificial lighting, and in some cases basic medical services.

P.6.1.2 |	harassment, intimidation, and/or exploitation, especially in regard to women?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.3 |	discriminatory working conditions and/or lack of equal opportunity where national law provides provision to address non-discrimination in employment?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.4 |	use of child labour? (including third-party engaged workers)	☐ YES ☐ POTENTIALLY ☒ NO
P.6.1.4 |	inadequate and verifiable mechanisms for age verification?	☐ YES ☒ NO
P.6.1.7 |	no processes and measures in place for the safety and health of project workers?	☐ YES ☒ NO
P.6.1.7 |	No provision of safety and health training provisions, including on the proper use and maintenance of personal protective equipment conducted by competent persons and the maintenance of training records?	☐ YES ☒ NO
P.6.1.7 |	No provision to record and document accidents, diseases, incidents, and any resulting injuries, illnesses, or deaths?	☐ YES ☒ NO
P.6.1.8 |	occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?	☐ YES ☒ NO
P.6.1.9 |	No measures to protect vulnerable project workers from harassment, exploitation, and gender-based violence (GBV)? This includes women, people with disabilities, migrant workers, and young workers.	☐ YES ☒ NO
P.6.1.10 |	No grievance mechanism available for workers to voice workplace concerns.	☐ YES ☒ NO
P.6.1.11 |	No measures for due diligence and the establishment of policies and procedures to manage and monitor the performance of third-party employees in the project?	☐ YES ☒ NO

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

The project is implemented in the field by Virridy Carbon LLC. The employees' rights are a cross-cutting issue and are respected.
All employees work voluntarily for the project, no forced labor is used and all employment is in compliance with national laws and consistent with the principles of standard ILO conventions. The workers can establish and join labor organizations. In case new workers are hired, the working agreement is documented and implemented in compliance with Section 6.1 of GS4GG Safeguarding Principles & Requirements version 1.2.

P.6.2 |NEGATIVE ECONOMIC CONSEQUENCES		
P.6.2.1 |	Is there a risk of project failure during implementation or after project certification due to a lack of financial resources?	☐ YES ☒ NO
P.6.2.2 |	Does the project have potential negative impacts or pose a risk to the local economy?	☐ YES ☒ NO
P.6.2.2 |	Are there any potential risks or negative impacts this project may have on vulnerable or marginalised social groups, despite the benefits it may bring?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
NA		
Would the project involve or lead to:		
P.6.2.2 |	economic impacts (negative/detrimental) to the local economy?	☐ YES ☐ POTENTIALLY ☒ NO
P.6.2.2 |	negative economic consequences during and after project implementation, e.g., for vulnerable and marginalised social groups in targeted communities?	☐ YES ☐ POTENTIALLY ☒ NO
If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
The use of water filters ensure water quality and improving health, which can be considered to have positive impacts on the project beneficiaries' economic situations. No potential risks for the local economy are expected.		

P.7 |**CLIMATE AND ENERGY**

P.7.1 |GHG EMISSIONS

P.7.1.1 |	Does the project have a risk of increasing greenhouse gas emissions over the Baseline Scenario?	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
NA		
Would the project involve or lead to:		
P.7.1.1 |	increase greenhouse gas emissions over the Baseline Scenario?	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.
The Project reduces GHG emissions as will be monitored and verified in line with the GS4GG. Leakage is assessed as part of the quantification methodology applied.

P.7.2 |ENERGY SUPPLY

P.7.2.1 |	Does the project pose a risk to the availability and reliability of energy supply to other users?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.
NA

Would the project involve or lead to:		
P.7.2.1 |	negative impact on the availability and reliability of energy supply to other users?	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.
NA

P.8 |WATER

P.8.1 |IMPACT ON NATURAL WATER PATTERNS/FLOWS

P.8.1.1 |	Does the project increase water usage to a level that will not allow for the maintenance of environmental flows?	☐ YES ☒ NO
P.8.1.1 |	Does the project result in the discharge of wastewater that does not meet the required standard for beneficial reuse and could therefore negatively impact the environmental flow?	☐ YES ☒ NO
P.8.1.1 |	Does the project have the potential risk to exceed the rate of recharge for the groundwater source?	☐ YES ☒ NO
P.8.1.1 |	Does the project involve any processes or activities that could contaminate the groundwater and render it unsuitable for use?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.
NA

Would the project involve or lead to:		
P.8.1.1 |	affect the natural or pre-existing pattern of watercourses, groundwater and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	☐ YES ☐ POTENTIALLY ☒ NO
P.8.1.1 |	Wastewater discharge of quality that does not meet the required standard for beneficial reuse?	☐ YES ☐ POTENTIALLY ☒ NO
P.8.1.1 |	significant extraction, diversion of ground water? For example, construction of dams, reservoirs, river basin developments, groundwater extraction	☐ YES ☐ POTENTIALLY ☒ NO
P.8.1.2 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA
If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
The project does not affect the natural or pre-existing pattern of watercourses, groundwater and/or the watersheds, nor it incur water related issues.		
P.8.2 |EROSION AND/OR WATER BODY INSTABILITY		
P.8.2.1 |	Does the project have a risk of negatively impacting the catchment and has it been assessed and addressed?	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
NA		
Would the project involve or lead to:		
P.8.2.2 | - P.8.2.5 |	negatively impact on the catchment area? *If yes, Erosion prevention measures, including soil and slope protection measures, must be implemented before project commencement. These measures should involve natural terracing, infiltration strips, permanent ground cover, hedge and tree rows, and effective slope length assessment. Regular reassessment of these measures is necessary.*	☐ YES ☐ POTENTIALLY ☒ NO
P.8.2.6 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.
The Project does not cause additional erosion directly or indirectly and/or water body instability or disrupt the natural pattern of erosion.

P.9 |ENVIRONMENT, ECOLOGY AND LAND USE

P.9.1 |LANDSCAPE MODIFICATION AND SOIL

P.9.1.1	Is there any risk of soil resource degradation or loss of ecosystem services provided by soils in the project? *If yes, the project shall maintain healthy soils by minimising negative impacts on soil health, productivity, structure, and water retention. Steps to minimise soil degradation include crop rotation, composting, using N-fixing plants, and reducing tillage and ecologically harmful substances.*	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.
NA

Would the project involve or lead to:		
P.9.1.4 |	production, harvesting, and/or management of living natural resources by small-scale landholders and/or local communities?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.1.4 |	if answer to above question “yes” or “potentially”, does project adopt appropriate and culturally sensitive sustainable resource management practices?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.
NA

P.9.2 |VULNERABILITY TO NATURAL DISASTER

P.9.2.1 |	Does the project have any risks associated with natural or man-made hazards that could result from land use changes due to the project?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.
The project’s impact on environment is positive; no negative impacts are expected. Moreover, the water filter installation activities do not include planting or other agricultural

activities, producing chemicals or use of GMOs. The installation of water filter does not generate hazardous waste.		
Would the project involve or lead to:		
P.9.2.2 |	any potential risks that require emergency preparedness and response planning?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.2.2 |	if answer to above question "yes" or "potentially", did the project developer disclose appropriate information about emergency preparedness and response to affected communities?	☐ YES ☐ NO ☒ NA
If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
The Project is not suspected to lead to increased vulnerability to any extreme climatic conditions.		
P.9.3 |BIOSAFETY AND GENETIC RESOURCES		
P.9.3.1 |	Does the project involve the transfer, handling, and use of genetically modified organisms/living modified organisms that may result in adverse effects on biological diversity?	☐ YES ☒ NO
If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
The Project doesn't involve, and is not negatively impacted by, the use of genetically modified organisms, or GMOs.		
Would the project involve or lead to:		
P.9.3.1 |	the transfer, handling and use of genetically modified organisms/living modified organisms (GMOs/LMOs) that result from modern biotechnology	☐ YES ☐ POTENTIALLY ☒ NO
P.9.3.1 |	If answer to above question is "yes" has a risk assessment by a competent Expert stakeholder been carried out in accordance with Annex iii of the Cartagena protocol on biosafety to the convention on biological diversity?	☐ YES ☐ NO ☒ NA
P.9.3.2 |	If answer to above question is "yes" has any risks identified in the risk assessment?	☐ YES ☐ NO ☒ NA
P.9.3.3 |	Forestry (for example Afforestation/Reforestation) involving GMO planting? *Note - Forestry projects (for example Afforestation/ Reforestation) involving GMO planting are not eligible for Certification under Gold Standard for the Global Goals.*	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.
NA

P.9.4 |RELEASE OF POLLUTANTS

P.9.4.1 |	Does the project have a risk of releasing pollutants to air, water, and land in routine, non-routine, or accidental circumstances?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.
NA

Would the project involve or lead to:

P.9.4.1 |	any potential risk of pollutant release that cannot be avoided?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.4.3 |	If answer to above question is “Yes” or “potentially”, has the project identified all potential pollution sources that may degrade the quality of soil, air, surface, and groundwater in the project area?	☐ YES ☐ NO ☒ NA
P.9.4.2 |	If answer to above question is “Yes” or “potentially”, do the pollution prevention and control technologies and practices applied during the project life cycle align with national regulations or international best practices?	☐ YES ☐ NO ☒ NA
P.9.4.3 |	If answer to above question is “Yes”, is there a monitoring plan to ensure that mitigation measures are implemented, and resources are protected?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.
NA

P.9.5 |HAZARDOUS AND NON-HAZARDOUS WASTE

P.9.5.1 |	Does the project involve the generation of waste materials (both hazardous and non-hazardous)?	☐ YES ☒ NO
P.9.5.3 |	Does the project involve risk of release of hazardous materials resulting from their production, transportation, handling, storage, or use?	☐ YES ☒ NO
P.9.5.5 |	Does the project involve the use of any chemicals or materials subject to international bans or phase-outs?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
NA		
Would the project involve or lead to:		
P.9.5.1 |	the generation and management of waste materials?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.5.1 |	treatment, destruction, or disposal of waste material?	☐ YES ☐ NO ☒ NA
P.9.5.1 |	If answer to above question is "Yes", does the project involve an environmentally friendly method that includes appropriate control of emissions and residues resulting from the handling and processing of waste material?	☐ YES ☐ NO ☒ NA
P.9.5.3 |	risk of release of hazardous materials resulting from their production, transportation, handling, storage, or use?	☐ YES ☐ NO ☒ NA
P.9.5.3 |	If answer to above question is "yes", does project has measures in place to address health risks?	☐ YES ☐ NO ☒ NA
P.9.5.4 |	Involve manufacture, trade, and use of chemicals and hazardous materials subject to international bans or phase-outs due to their high toxicity to living organisms, environmental persistence, potential for bioaccumulation, or potential for depletion of the ozone layer	☐ YES ☐ POTENTIALLY ☒ NO
If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
The expected waste generated by the project activity (e.g., filter cartridges) does not require special handling or disposal.		
P.9.6 |PESTICIDES & FERTILISERS		
P.9.6.1 |	Does the project involve the use of chemical pesticides?	☐ YES ☒ NO
P.9.6.5 |	Does the project involve purchase, store, manufacture, trade or use products that fall in Classes IA (extremely hazardous) and IB (highly hazardous)	☐ YES ☒ NO
P.9.6.6 |	Does the project use fertilisers, and if so, are measures being taken to minimise their use and nutrient losses to the environment?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		

NA

Would the project involve or lead to:

P.9.6.1 |	chemical pesticides use for pest management?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.6.4 |	If answer to question above is "yes" or "potentially", does project has documented Chemical Pesticides Policy in place?	☐ YES ☐ NO ☒ NA
P.9.6.5 |	purchase, store, use, manufacture, or trade in Class II (moderately hazardous) pesticides?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.6.5 |	If answer to question above is "yes" or "potentially", does project has appropriate controls on manufacture, procurement, or distribution and/or use of these chemicals?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above questions, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NA

P.9.7 |HARVESTING OF FORESTS

P.9.7.1 |	Does the project have a risk of unsustainable forest management, including timber harvesting?	☐ YES ☒ NO
P.9.7.1 |	Does the project pose a risk of depleting biodiversity and ecosystem functionality in areas where improved forest management is undertaken?	☐ YES ☒ NO
P.9.7.1 |	Does the project risk not meeting requirements for environment-friendly, socially beneficial, and economically viable plantations using native species whenever possible?	☐ YES ☒NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

NA

P.9.8 |FOOD SECURITY

P.9.8.1 |	Does the project involve the risk of negatively influencing access to and availability of food for people affected?	☐ YES ☒ NO

If the answer to the question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

NA

Would the project involve or lead to:		
P.9.8.1 |	modification of the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	☐ YES ☐ POTENTIALLY ☒ NO
If the answer is "yes" or "potentially" to the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.		
NA		
P.9.9 | ANIMAL WELFARE		
P.9.9.1 |	Does the project involve any risks to animal welfare? Animal welfare shall be ensured by providing access to water and food, appropriate environment, humane treatment, and staff training. Evidence of mistreatment will be treated as an immediate non-conformity.	☐ YES ☒ NO
P.9.9.2 |	Does the project involve any potential risk of excessive or inadequate use of veterinary medicines?	☐ YES ☒ NO
P.9.9.4 |	Does the project involve the risk of administering synthetic growth promoters, including hormones?	☐ YES ☒ NO
If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.		
NA		
Would the project involve or lead to:		
P.9.9.1 |	animal husbandry or harvesting of fish populations or other aquatic species?[51]	☐ YES ☐ NO ☒ NA
P.9.9.1 |	limiting access for animals to basic needs like drinking water, adequate food, daylight, appropriate shelter etc.?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.9.3 |	inadequate measures to isolate sick animals and control the spread of disease, especially zoonotic diseases?	☐ YES ☐ NO ☒ NA

[51] 'Involve' means if the project mechanism and/or impact(s) are achieved via changing animal husbandry practices in some way.

P.9.9.5 |	inadequate low-stress methods, equipment, and facilities that facilitate calm animal movement.	☐ YES ☐ NO ☒ NA
P.9.9.6 |	inadequate measures to ensure that animals are exposed to the least stress possible during transportation and slaughtering?	☐ YES ☐ NO ☒ NA
P.9.9.7 |	inappropriate spacing per animal and stocking rates per land unit?	☐ YES ☐ NO ☒ NA
P.9.9.8 |	inadequate measures to address the specific needs of aquatic animals?	☐ YES ☐ NO ☒ NA
P.9.9.9 | P.9.9.10 |	primary production of living natural resources such as animal husbandry, aquaculture, and fisheries? If the answer is yes, implement industry-standard sustainable management practices in line with to one or more relevant and credible standards and utilise available technologies.	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NA

P.9.10 |HIGH CONSERVATION VALUE AREAS AND CRITICAL HABITATS

P.9.10.1 |	Does the project have the risk of negatively impacting HCV areas and/or critical habitats?	☐ YES ☒ NO
P.9.10.2 |	Does the project in the project area or area of downstream impacts have risks to the following: native tree patches, individual native trees, freshwater resources (including rivers, lakes, swamps, temporary water bodies, and wells), habitats of rare, threatened, and endangered species, and biodiversity-enhancing areas?	☐ YES ☒ NO

If the answer to any of the questions above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

NA

Would the project involve or lead to:

P.9.10.1 |	identified habitats as HCV areas and or Critical habitats?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.10.1 |	If answer to above question is “yes”, does the project have any risks that could negatively impact the catchment,	☐ YES

	project success, and surrounding HCV and ecological assets, as well as any measurable adverse impacts on the criteria or biodiversity values for which the critical habitat was designated, and on the ecological processes supporting that biodiversity?	☐ NO ☒ NA
P.9.10.1 |	If answer to above question is "yes", is a robust, appropriately designed, and long-term Habitats and Biodiversity Action Plan absent which will make the project unable to achieve net gains of those biodiversity values for which the critical habitat was designated?	☐ YES ☐ NO ☒ N/A
P.9.10.2 |	Does the project area or area of downstream impacts have native tree patches, individual native trees, freshwater resources (including rivers, lakes, swamps, temporary water bodies, and wells), habitats of rare, threatened, and endangered species, and biodiversity-enhancing areas?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.10.2 |	If the answer to the above question is "yes", will the project have any adverse effects on these areas?	☐ YES ☐ No ☒ NA
P.9.10.3 |	If the answer to above question is "yes", does the project has opportunities to minimise unwarranted conversion or degradation of the habitat and to enhance the habitat as part of its development?	☐ YES ☐ No ☒ NA
P.9.10.4 |	Is the project applying Land Use & Forest Activity Requirements and managing a minimum 10% of the project area to protect or enhance the biological diversity of native ecosystems following HCV approach as per the given requirements?	☐ YES ☐ No ☒ NA
P.9.10.5 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NA

P.9.11 |ENDANGERED SPECIES

P.9.11.1 |	Does the project lead to the reduction or negative impact on any recognised Endangered, Vulnerable or Critically Endangered species?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

NA

Would the project involve or lead to:

P.9.11.2 |	distortion of habitats of endangered species?	☐ YES ☐ POTENTIALLY ☒ NA

P.9.11.2 |	If answer to the above question is "yes", does the project plan to protect and enhance them?	☐ YES ☐ POTENTIALLY ☐ NO ☒ N/A
P.9.11.2 |	Are opinions and recommendations of an Expert Stakeholder(s) not sought and demonstrated as being included in the project design?	☐ YES ☐ NO ☒ NA

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NA

P.9.12 |INVASIVE ALIEN SPECIES

P.9.12.1 |	Does project introduce any alien species (not currently established in the country or region of the project) into new environments?	☐ YES ☒ NO

If the answer to question above is "yes," please explain project situation and how the project will ensure compliance with applicable requirements.

NA

Would the project involve or lead to:

P.9.12.1 |	risk of introducing any alien species with a high risk of invasive behaviour regardless of whether such introductions are permitted under the existing regulatory framework?	☐ YES ☐ POTENTIALLY ☒ NO
P.9.12.1 |	risk of potential accidental or unintended introductions including the transportation of substrates and vectors (such as soil, ballast, and plant materials) that may harbour alien species.	☐ YES ☐ POTENTIALLY ☒ NO
P.9.12.2 |	risk of spreading alien species into areas in which they have not already been established?	☐ YES ☐ POTENTIALLY ☒ NO

If the answer is "yes" or "potentially" to any of the above question, please provide a brief description of the project situation below. Also, provide justification and/or evidence as necessary to demonstrate compliance with applicable requirements.

NA

APPENDIX 2- CONTACT INFORMATION OF VPA IMPLEMENTER

Organisation name	Virridy Carbon LLC
Registration number with relevant authority	
Street/P.O. Box	1026 Lincoln Place
Building	
City	Boulder
State/Region	Colorado
Postcode	1026
Country	USA
Telephone	
E-mail	evan.thomas@virridy.com
Website	www.virridy.com
Contact person	Evan Thomas
Title	CEO
Salutation	Ph.D.
Last name	Thomas
Middle name	
First name	Evan
Department	US Executive Office
Mobile	
Direct tel.	
Personal e-mail	

APPENDIX 3- LUF ADDITIONAL INFORMATION

Risk of change to the Project Area during Project Certification Period:	N/A
Risk of change to the Project activities during Project Certification Period:	N/A
Land-use history and current status of Project Area:	N/A
Socio-Economic history:	N/A
Forest management applied (past and future)	N/A
Forest characteristics (including main tree species planted)	N/A
Main social impacts (risks and benefits)	N/A
Main environmental impacts (risks and benefits)	N/A
Financial structure	N/A
Infrastructure (roads/houses etc):	N/A
Water bodies:	N/A
Sites with special significance for indigenous people and local communities - resulting from the Stakeholder Consultation:	N/A
Where indigenous people and local communities are situated:	N/A
Where indigenous people and local communities have legal rights, customary rights or sites with special cultural, ecological, economic, religious or spiritual significance:	N/A

APPENDIX 4 - DESIGN CHANGES

A4.1. Details of proposed or actual design change

>>

N/A

A4.2. Describe the Impacts of Design Change on the following

a. Additionality

>>

N/A

b. Applicability of methodology and other methodological regulatory documents with which the project activity has been certified

>>

N/A

c. Compliance with the monitoring plan of the applied methodology

>>

N/A

d. Level of accuracy and completeness in the monitoring of the project activity compared with the requirements contained in the registered monitoring plan

>>

N/A

e. ***Scale of the project activity***

>>

N/A

f. Stakeholder consultation

>>

N/A

g. Sustainable development criteria

>>

N/A

h. Safeguarding Assessment

>>

N/A

i. Compliance with applicable legislation

>>

N/A

Revision History

Version	Date	Remarks
2.3	Dd/mm/yyyy	Editorial changes in line with V2.1 of the Safeguarding Principles and Requirements
2.2	21 June 2023	Editorial changes in line with V2.0 of the Safeguarding Principles and Requirements
2.1	14 April 2023	Integrated the design change memo as annex of the document.
2.0	4 May 2022	
1.1	7 October 2020	Hyperlinked section summary to enable quick access to key sections Improved clarity on Key Project Information Inclusion criteria table added Gender sensitive requirements added Prior consideration (1 yr rule) and Ongoing Financial Need added Safeguard Principles Assessment as annex and a new section to include applicable safeguards for clarity Improved Clarity on SDG contribution/SDG Impact term used throughout Clarity on Stakeholder Consultation information required Provision of an accompanying Guide to help the user understand detailed rules and requirements
1.0	10 July 2017	Initial adoption