Gold Standard for the Global Goals

METHODOLOGY

METHODOLOGY

GS4GG PAA M400-12

SDG 13

EMISSION REDUCTIONS FROM SAFE DRINKING WATER SUPPLY

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SUMMARY

This methodology is applicable to activities that introduce zero or low greenhouse gas water purification systems to provide safe drinking water, meeting the basic human need for safe hydration by displacing the baseline emissions associated with boiling unsafe water with non-renewable biomass or fossil fuels.

It is Version 2.0 of the Safe Drinking Water Supply methodology, revised to align with the Gold Standard for the Global Goals (GS4GG) Paris-Agreement-aligned (PAA) requirements. It applies to four technology classes — household (HWT), institutional (IWT), community-level (CWT) water-treatment technologies, and community water-supply (CWS) technologies — and provides two calculation methods: Method 1 (CWT/CWS) and Method 2 (HWT/IWT) and accommodates progressive distribution.

Baseline emissions are determined under a stepwise approach incorporating uncertainty and ambition adjustments and a conservative business-as-usual ceiling; net emission reductions are the crediting baseline less activity emissions and leakage. The methodology operates under the GS4GG Community Services Activity Requirements and may support claims to SDG 6 (clean water and sanitation) alongside its SDG 13 (climate action) mitigation outcome. The evidentiary basis for every default value and design choice resides in the accompanying Supplementary Information (SI); where this normative text and the SI differ, this methodology governs.

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1| KEY INFORMATION

1.1.1 | The following table describes the key information for the application of the methodology.

Table 1. Key information

Term	Description
Activity summary	The mitigation activity introduces new, or rehabilitates existing, zero-emission or low-emission technologies that supply safe drinking water to households, institutions or communities, displacing the boiling of unsafe water with non-renewable biomass or fossil fuels.
Mitigation type	☒ Emission reduction
Applicable activity scale	☒ Micro scale (≤10,000 tCO_2e per year) ☒ Small scale (≤ 60,000 tCO_2e per year) ☒ Large scale (> 60,000 tCO_2e per year)
Sectoral Scope	Scope 3. Energy demand
Activity Requirement	Community Services Activity Requirements
Activity start date	The start date is the date of implementation of the first unit under the mitigation activity.
Crediting Period start date	The start date of the Crediting Period is: 1. **For distributed HWT/IWT:** The date of implementation is defined as the first day of use of the technology unit by the end-user. 2. **For CWT/CWS:** The date of implementation is defined as the date on which water supply to end-users commences, subject to the achievement of initial water quality verification (compliance with Parameter SDWS 3) at the Point of Collection (PoC). 3. **For rehabilitated CWT/CWS:** The date of implementation is defined as the date on which restored operation commences, ensuring the delivery of Safe Drinking Water (SDW) that meets all applicable water quality standards at the Point of Collection (PoC).
Crediting period length	The maximum crediting period is five years, renewable twice (total of 15 years). The crediting period shall not exceed the technical lifetime of the activity technology unless measures for replacement and maintenance are in place. For phased distribution, the crediting period start date is the operations start date of the first distributed/installed unit.

	Subsequent units generate emission reductions from their respective operations start dates.
Geographical applicability	Global
Limitations	No limitations beyond the applicability criteria.

2| DEFINITIONS

2.1.1 | The definitions outlined in the Glossary of Gold Standard for the Global Goals and the Activity Requirements shall apply, in addition to those outlined below:

Table 2. Terms and definitions

TERM	DEFINITION
Community level water treatment technologies (CWT)	Technologies that treat water at a central point to produce safe water. The safe water may be supplied directly to the premises of users (e.g., via piping), or users may retrieve water from the central point or another distribution point (e.g., a water kiosk).
Community water supply technologies (CWS)	Technologies that generate a supply of water for a community (e.g., new borehole, rehabilitated handpump, solar-powered pump). If the supplied water is safe, users may retrieve it from the supply point. If the supplied water is not safe, the CWS shall be combined with HWT, IWT, or CWT.
Crediting Baseline	The baseline used to calculate emission reductions, determined as the lower value between the Conservative BAU Scenario and the downward adjusted baseline emissions, multiplied by the compliance factor (Section 7|).
End-user	The individual or premises that accesses and consumes the safe drinking water supplied by the activity.
Free Residual Chlorine (FRC)	The concentration of chlorine remaining after disinfection demand has been met (mg/L), used as a complementary operational indicator of continued disinfection in chlorine-based systems.
Household water treatment technologies (HWT)	Technologies that treat water in the home (Point of Use) to obtain safe water (e.g., gravity filter).
Improved water sources	A drinking-water source that, by the nature of its construction and design, adequately protects the source from outside contamination, in particular by fecal matter (WHO, 2017). (See Annex -2|Annex -4| for detailed categorization).
Institutional water treatment	Technologies that treat water on the premises of an institution (e.g., school, clinic, prison) to obtain safe water.

technologies (IWT)	
Low-emission technology	A technology producing limited direct GHG emissions during operation (e.g. powered by grid electricity or a dedicated renewable source). Operating emissions are accounted for under Section 8|
Minimum Service Level (MSL)	The level of safe-drinking-water service meeting basic human needs, used as the basis for the suppressed-demand baseline (Section 7.3 |).
Minimum Service Quality Standard (MSQS)	The minimum service - at least 'Basic-drinking water service' (WHO/UNICEF JMP) - that an activity shall provide to be eligible for crediting under suppressed demand provisions. (Section 3.2.4 |).
Point of Collection (PoC)	The location where the end-user retrieves water from the CWT or CWS infrastructure (e.g., the tap at a water kiosk, the spout of a borehole pump).
Point of Use (PoU)	The location where the water is accessed for consumption by the end-user. a. For HWT/IWT: The exit of the treatment technology. b. For CWT/CWS (piped): The tap within the premises. c. For CWT/CWS (retrieved): The transport/storage container within the premises.
Premises	A household, residential, institutional or commercial location served by the activity, identified for baseline determination, monitoring and the avoidance of double counting.
Progressive (phased) distribution	An implementation pattern in which technology units are installed gradually, and adoption increases, over the crediting period, each unit generating reductions from its operations start date.
Public Distribution Network (PDN)	A public water distribution service provided by government to people living within its jurisdiction, either directly or through an authorized party. Treated as a collection/distribution pathway; PDN-supplied water is eligible for treatment crediting where it fails the SDW definition at the PoC or PoU (Section 3.1 |).
Rehabilitation	The restoration to operation of an existing CWT or CWS that was non-operational for at least three months prior to the intervention and for which no maintenance or repair plan was in place (Section 3.2 |; SDWS 2).
Safe drinking water (SDW)	Water that is free from pathogens and elevated levels of toxic substances at all times (WHO, 2017). For this methodology, SDW shall conform to the specific microbial and chemical quality standards defined in Section 3.2 |

Technical life	The average time for which the activity technology may continue to be operated in a safe manner and with minimal loss of performance, as per manufacturer specification or independent study report (SDWS 7).
Water Consumption Field Test (WCFT)	The field measurement of the volume of safe drinking water consumed per person or premises, used to determine or verify QPW_p in place of the methodology default (Section 7.3 |; SDWS 29)
Wood-to-charcoal conversion factor (WCCF)	This factor expresses the amount of wood needed to produce a standard quantity of charcoal, typically expressed as a ratio of the mass of air-dry wood input per mass of charcoal output.
Zero emission technology	A factor expressing the amount of wood required to produce a standard quantity of charcoal - typically expressed as a ratio of the mass of air-dry wood input per mass of charcoal output. Activity developers shall apply a stratified default approach: • **Sub-Saharan Africa (SSA) and Least Developed Countries (LDCs):** A default WCCF ratio of 6:1 (approx. 17% kiln efficiency) may be applied, reflecting the dominance of traditional earth-mound kilns. • **Industrialized or High-Efficiency Regions:** A conservative default WCCF ratio of 4:1 (approx. 25% kiln efficiency) shall be applied. • **Optional conservative application:** Activity developers may apply the conservative default WCCF ratio of 4:1 irrespective of the geographic region, including SSA and LDC contexts. Activity-specific overrides for upstream charcoal emission factors are not permitted.

3| SCOPE, APPLICABILITY, AND ENTRY INTO FORCE

3.1 | Scope

3.1.1 | This methodology is applicable to mitigation activities that introduce a new, or rehabilitate an existing, zero-emission or low-emission technology to supply safe drinking water (SDW).

3.1.2 | The activities aim to meet the basic human need for safe hydration by reducing or avoiding the baseline emissions associated with boiling unsafe drinking water with non-renewable biomass or fossil fuels, and to delivering water safe for consumption at the Point of Use (PoU).

3.1.3 | The applicable technology classes and corresponding emission-reduction calculation methods (Section 7|) are set out in Table 3.:

Table 3. Applicable technologies and calculation methods

Technology class	Examples	Method
HWT — Household	Ceramic/sand/composite/membrane filters; chlorine or bleach dosing; UV	Method 2
IWT — Institutional	On-premises treatment at schools, clinics, prisons, refugee camps	Method 2
CWT — Community treatment	Centralised treatment delivering safe water at a collection point (kiosk)	Method 1
CWS — Community supply	New/rehabilitated borehole handpumps; protected springs; mechanised/solar pumps	Method 1

3.1.4 | The methodology applies to zero-emission technologies (e.g. gravity filters, handpumps) and low-emission technologies; operating emissions from electricity and fossil-fuel use are accounted for under Section 8|.

3.1.5 | Eligible water sources include groundwater, surface water, rainwater harvesting, and water supplied through a Public Distribution Network (PDN). The source is the point at which the end-user collects water, not its point of origin. PDN-supplied water is eligible for treatment crediting where the developer documents that the supply fails the SDW definition at the PoC or PoU, with evidence of the original source, contamination risk and non-duplication of service.

3.1.6 | The activity may involve progressive distribution.

3.2 | Applicability

3.2.1 | Technology Specifications and Energy Sources

3.2.1.1 | **Eligible Technologies:**

a | **HWT, IWT, and CWT** - water filters (ceramic, sand, composite, membrane), bleach/chlorine treatment, and UV disinfection.

b | **CWS -** new installation or rehabilitation of borehole handpumps, protected springs, and mechanised water pumps.

3.2.1.2 | **Fossil Fuel Restrictions:**

a | Water pumps powered by dedicated fossil-fuel engines are not eligible.

b | Back-up fossil-fuel engines (e.g., diesel generators for electric pumps) are permitted only where use is restricted to no more than 10% of the total operating hours of the primary technology (SDWS 39).

3.2.2 | Technology Performance

3.2.2.1 | **HWT/IWT:** It shall be demonstrated that the technology meets (SDWS 2):

a | National standard or guideline for household drinking water treatment; OR

b | WHO International Scheme 2-star or 3-star level (Comprehensive Protection) , if no national standard is available.

3.2.2.2 | **CWT/CWS:** It shall be demonstrated at the start of each crediting period (SDWS 3) and retested following any event that could lead to source contamination (e.g., flooding) that the water at the PoC achieves both:

a | **microbial quality**: national standards or, if absent, the WHO guideline values.

b | **chemical/physical quality**: national-priority chemical contamination standards, e.g., arsenic, fluoride and physical/aesthetic aspects, if absent, relevant international standards or guidelines**.**

3.2.3 | **Water Quality Standards:**

3.2.3.1 | SDW is defined in Section 2|; compliance is demonstrated under Section 3.2.2 |.

3.2.3.2 | Ongoing water quality monitoring for crediting (parameter the water-quality modifier $M_{q,y}$) (SDWS 22) shall be determined based on microbiological quality per:

a | National microbiological standards; OR

b | If a national standard is not available, WHO Guidelines "low risk" category, defined conservatively as less than 10 Colony Forming Units (CFU) of E. coli per 100 ml sample (<10 CFU/100ml) - (Table 7.10 WHO 2022)[1].

3.2.3.3 | **Water Hygiene Education:** The activity shall conduct annual water hygiene education campaigns (SDWS 24).

3.2.4 | **Suppressed Demand and Minimum Service Quality Standard (MSQS):**

3.2.4.1 | The baseline may account for suppressed demand where end-users consume unsafe water, or an inadequate quantity of safe water, because of energy poverty, affordability or institutional service gaps (Section 7.3 |), subject to the mandatory physiological hydration caps to prevent over-crediting.

3.2.4.2 | Limitations: large-scale activities shall not claim a suppressed-demand baseline and may credit only end-users demonstrating boiling in the pre-activity scenario. The suppressed-demand baseline is restricted to micro- and small-scale activities.

3.2.4.3 | MSQS: An activity applying suppressed demand shall provide at least "Basic drinking water service" as defined by the WHO/UNICEF JMP. A HWT/IWT activity treating water from an unimproved or unsafe source is eligible

[1] World Health Organization. (2022). Guidelines for Drinking-water Quality: fourth edition incorporating the first and second addenda. Geneva: World Health Organization.

provided it delivers Basic service at the PoU; the MSQS describes the service provided, not the pre-activity condition.

3.2.4.4 | Institutional end-users: suppressed demand may apply except where the institution is connected to a PDN supplying safe drinking water, unless the supplied water is shown not to meet the SDW definition (SDWS 12).

3.2.4.5 | **SDG Claims:** Activities may claim SDG 6 (Indicator 6.1.1) for "Basic" or "Safely Managed" service levels where the relevant monitoring parameters are included (SDWS 23).

3.2.5 | **Accessibility (CWT/CWS):**

3.2.5.1 | Where water is retrieved by the user at the Point of Collection (PoC), the following accessibility criteria apply (SDWS 1):

a | **Default criteria:** The water source shall be available within a distance of 1 km or less from the end-users' premises, OR a total collection time of 30 minutes or less for a round trip, including queuing.

b | **Context - specific criteria:** Where the default criteria are impractical (e.g., Arid and Semi-Arid Lands, dispersed or nomadic populations) and inconsistent with national water strategies, users beyond the threshold may be credited if the activity developer provides robust, verifiable justification, validated by the VVB, including:

i. Evidence that the arrangement is consistent with national or regional water supply policies for the specific context.

ii. Rigorous demonstration (e.g., surveys, GPS data) that the population beyond the threshold actively utilizes the water point as their primary source for drinking water.

3.2.6 | **Rehabilitation**

3.2.6.1 | Where the activity rehabilitates an existing CWT or CWS, the developer shall provide verifiable evidence that it was non-operational for ≥ three months and that no maintenance or repair plan was in place (SDWS 2).

3.2.7 | **Technical life and replacement**

3.2.7.1 | Where the technical life of the technology (SDWS 7) is shorter than the crediting period, the developer shall provide replacement or retrofit measures with a performance guarantee; otherwise emission-reduction claims are limited to the technical life

3.2.8 | **Avoidance of Double Counting:**

3.2.8.1 | To avoid double-counting of emission reductions, the activity developer shall:

a | explain the distribution method;

b | identify each unit with a unique identifier and tracked in the relational activity database Section 14.1.3 |) - to comply with data-protection

law, geographic tracking may be logged at the lowest permissible administrative unit (waterpoint/village/ward) rather than precise household GPS, provided unique identifiers prevent double counting.

c | Communicate ownership rights and intention of claiming emission reductions by contract or written assertions to all activity participants, manufacturers, and retailers (SDWS 18).

d | Obtain informed consent from end-users that they cannot claim emission reductions from the activity (SDWS 20).

e | Exclude units already in any other voluntary market, PACM, or CDM activity and strive not to displace the devices of another activity/PoA (SDWS 19).

3.2.8.2 | **Overlap with Improved Cookstoves (ICS):** Where and SDWS and ICS activity overlap at end-user point level, the SDWS baseline shall assume the use of the efficient ICS device; both activities do not claim the same fuel savings. Overlap is established empirically through surveys, not by shared boundary; anonymised registry checks may verify non-duplication across developers

3.2.8.3 | **Overlap between Household (HWT) and Institutional (IWT) Activities:** Where the HWT activity operates in the same geographical area as a registered Institutional Water Treatment (IWT) activity (e.g., WASH in Schools) serving the same population, the following rules apply to prevent double counting of the same liter of water consumed:

a | Combined Cap Enforcement: The total volume of safe water credited for an individual beneficiary across both activities shall not exceed the applicable age-specific Water Volume Cap (QPW_P,SDWS 29).

b | Attribution Rule: The IWT (e.g., School) activity claims the volume consumed on-site. The HWT activity shall deduct this "school-hours volume" from the daily volume claimed for the school-aged population (5–18 years) in the overlapping households (Section 7.3.11 |).

3.2.8.4 | **Overlap with Jurisdictional REDD+ Programs:** Where the activity boundary overlaps with an implemented Jurisdictional REDD+ (J-REDD+) program or a similar national or sub-national scheme for forestry, the activity developer shall demonstrate that the emission reductions are not subject to double issuance risk.

a | Overlap risk shall be considered immaterial unless the Host Country's Jurisdictional REDD+ FREL/FRL baseline explicitly incorporates and accounts for subsistence household fuelwood consumption as a qualified driver of deforestation. The activity developer shall submit a Declaration of Non-Overlap, which the VVB shall verify against publicly available J-REDD+ registry documents. Exhaustive bespoke jurisdictional modelling or formal government letters are not required unless a direct conflict exists. Absent explicit inclusion of subsistence

fuelwood in the J-REDD+ baseline, the emission sources are considered distinct, and no further action shall be required.

b | If a direct conflict exists, the activity developer shall demonstrate that the activity specific reductions are not subject to double issuance risk by providing valid documentation for one of the following options:

i. **Option 1: Accounting Exclusion:** Documentation demonstrating that the jurisdictional program's Forest Reference Emission Level, Forest Reference Level, or accounting methodology explicitly excludes the specific emission sources (e.g., degradation from wood fuel harvesting) or activity classes (e.g., safe drinking water supply/clean cooking/thermal energy) addressed by the activity; OR

ii. **Option 2: Attribution Agreement**: A formal statement, or Letter of No Objection from the relevant authority (e.g., National, sub-national or authorised program administrator) confirming that the specific emission reductions generated by the activity are attributed to the activity and will be deducted from (or not claimed by) the jurisdictional program to prevent double issuance.

3.3 | Entry into force

3.3.1 | The date of entry into force is 90 days from the publication date of this methodology.

3.4 | Mandatory Compliance and Safeguards

3.4.1 | **GS4GG Requirements:** The activity shall adhere to the GS4GG Principles And Requirements, Safeguarding Principles and Requirements, and the Community Services Activity Requirements.

3.4.2 | **Regulatory Compliance:** The activity shall document the relevant regulatory framework (SDWS 4) and shall not undermine or conflict with any national, sub-national, or local regulations for safe drinking water supply, operation, maintenance, or tariffs.

3.4.3 | **CWT/CWS Maintenance and Operation:** All CWT and CWS activities shall include an ongoing maintenance and repair plan. The PDD/VPA-DD shall describe this plan, including the system for logging operation, maintenance events, and periods of downtime. This log is required during monitoring (SDWS 31).

3.4.4 | Activity developer shall adopt the WHO WSP risk-management cycle, provide SDS, safe storage/labeling, and PPE for chemicals (e.g., chlorine, acids/alkalis), ensure operator training and incident reporting, and apply technology-specific safeguards

3.4.5 | **Health and Safety:** Activities shall comply with health and safety requirements at both the organization level and for end-users, in line with Principle 3 of the Safeguarding Principles and Requirements.

3.4.6 | **Waste Management**: Developers shall ensure environmentally sound disposal or recycling of used filters, membranes, and chemical containers, in line with Principle 9.5. Where applicable, include e-waste (sensors, batteries, solar components) and brine/backwash/sludge management consistent with national environmental regulations

3.4.7 | **Water Resource Competition**: For CWS activities involving groundwater abstraction (e.g., boreholes):

a | **De Minimis Threshold:** Activity unit abstracting ≤ 5 m^3/day (averaged annually) per abstraction point are deemed to have a negligible impact on aquifer depletion and are exempt from hydrogeological assessment.

b | **Safeguard Assessment:** Activity unit abstracting > 5 m^3/day shall provide a hydrogeological assessment or permit from the national water authority confirming that the abstraction rate is within the sustainable yield of the aquifer.

4| NORMATIVE REFERENCES

4.1.1 | The following standards, methodologies, tools, and guidelines are normative references for the application of this methodology. Activity developers shall apply the latest valid version of these documents.

4.1.2 | References to CDM tools are valid until equivalent tools are published under Gold Standard (GS4GG) or the Article 6.4 Mechanism (A6.4)/Paris Agreement Crediting Mechanism (PACM). Upon publication of an equivalent tool, it shall supersede the corresponding CDM tool.

4.1.2.1 | GS4GG Standards and Requirements

a | Principles and Requirements

b | Safeguarding Principles and Requirements

c | Community Services Activity Requirements

d | GHG Emissions Reduction & Sequestration Product Requirements

4.1.2.2 | GS4GG Methodologies, Standards, and Tools

a | Requirements for Additionality Demonstration (V1.0)

b | Requirements for Baseline Setting (GS4GG A6 MS400-04) (V1.0)

c | Requirements for Addressing Leakage in Methodologies (GS4GG PAA MS400-05) (V1.0).

d | Requirements for Suppressed Demand Accounting in Methodologies (GS4GG A6 MS400-05) [final version is to be published]

e | Tool 01: Emissions from Fossil Fuel Combustion (V1.0)

f | Tool 02: Emissions from Freight Transportation (V1.0)

g | Tool 05: Downward Adjustment Factor (DAF) Determination (GS4GG A6 MT400-05) (V1.0)

h | Tool 06: Common Practice Analysis (V1.0)

i | Tool - Analysis of lock-in risk [Latest Approved Version]

j | Tool - Technical lifetime (addendum) [Latest Approved Version]

4.1.2.3 | UNFCCC/A6.4 Tools and Standards:

a | CDM TOOL33: Default values for common parameters (or subsequent A6.4 tools).

b | CDM Standard: Sampling and surveys for CDM project activities and programme of activities [PACM version supersedes]

c | CDM Guideline: Sampling and surveys for CDM project activities and programme of activities [PACM version supersedes]

d | A6.4 –AMT 007: Emissions from electricity generation and consumption (V1.0)

e | A6.4-AMT-006: Determination of the technical lifetime of equipment. (V1.0)

f | A6.4 -AMT 002: Investment analysis (V1.0)

g | A6.4-AMT 009: Fraction of non-renewable biomass (V1.0)

4.1.2.4 | **Other Normative Sources**:

a | Water Boiling Test (WBT) Protocol (Latest recognized version).

b | World Health Organization (WHO). Guidelines for Drinking-water Quality (Latest edition).

c | WHO International Scheme to Evaluate Household Water Treatment Technologies.

d | WHO/UNICEF Joint Monitoring Programme (JMP). Definitions for improved/unimproved water sources and service levels (e.g., Basic, Safely Managed).

5| ACTIVITY BOUNDARY AND GHGS SOURCES/SINKS

5.1 | Activity boundary

5.1.1 | The activity boundary encompasses all anthropogenic sources of GHGs that are under the control of the activity developer, are related to the activity, or are significantly affected by the activity.

5.1.2 | The activity developer shall clearly identify the activity boundary, target area, and fuel production and collection area following the definitions below.

5.1.2.1 | **Physical and Geographical Boundary:** The spatial extent of the activity boundary includes:

a | The physical, geographical site(s) of the low- or zero-GHG emitting technologies (CWT, CWS, IWT, HWT) installed or rehabilitated by the activity.

b | The household, commercial, and institutional buildings where the end-users of the safe water provided by the activity are located.

5.1.2.2 | **Energy Systems and Infrastructure:** The boundary includes:

a | any back-up engines or other equipment utilizing fossil fuels related to the operation of the activity technologies.

b | The electricity grid and/or dedicated renewable energy systems (e.g., solar PV arrays), in case electricity is used by the activity technologies.

5.1.2.3 | **Fuel Production and Collection Area:** The boundary includes the areas associated with baseline fuel sourcing:

a | Woody Biomass: Where the baseline fuel is woody biomass (including charcoal), the boundary includes the area within which this woody biomass is grown and collected (relevant for fNRB determination and leakage assessment).

5.1.2.4 | **Upstream Emissions (Activity):** The upstream emissions associated with the manufacture and transport of the activity devices attributable to the activity shall be accounted for as leakage (Section 9|).

5.1.2.5 | **Target Area:** The target area is the region(s) e.g., village(s) or town(s) where the considered baseline scenario(s) are deemed to be uniform. The target area provides an outer limit to the activity boundary in which the activity has a target population.

5.2 | GHG Sources – materiality and simplification

5.2.1 | Emissions occur in the baseline scenario during the production and combustion of fuels used for boiling water; and in the activity scenario during the operation of the activity technology (e.g., electricity consumption).

5.2.2 | **Materiality and Simplification Rules:** The following rules apply regarding the inclusion of emission sources:

a | **Baseline Simplification (Biomass):** Baseline emissions of CO_2 (non-renewable fraction), CH_4, and N_2O from biomass combustion shall be included as they are major sources.

b | **Baseline Simplification (Fossil Fuels):** Baseline emissions of CH_4 and N_2O from fossil fuel combustion may be omitted for simplification.

c | **Activity Emission Completeness:** All activity emissions (CO_2) from the use of electricity or fossil fuels shall be accounted for, unless demonstrably negligible. Activity emissions of CH_4 and N_2O may be excluded for simplification.

d | **Fuel Transportation Emissions:** Activity emissions from the transportation of fuel/biomass (including long-distance and home delivery transport) shall be accounted for if the total transportation distance is more than 200 km; otherwise, they can be neglected. If baseline transportation emissions are included, activity transportation emissions shall also be included, regardless of distance, to ensure consistency.

e | **Device Manufacturing/Transport: Embodied Emissions (Mandatory):** Indirect GHG emissions associated with the production, processing, and transport of inputs (cradle-to-gate embodied emissions of the activity devices) shall be accounted for as Leakage Emissions (Section 9|).

5.3 | Baseline Emissions

5.3.1 | The following table details the GHGs included in, or excluded from, the baseline scenario(s).

Table 4. Sources of Baseline Emissions

SOURCE	DESCRIPTION	GAS	INCLUDED?	JUSTIFICATION
Delivery of thermal energy (Woody Biomass)	Combustion of fuel in the baseline technology.	CO_2	Yes	Major source of emissions. Only CO_2 from the non-renewable fraction of biomass (fNRB) is included.
		CH_4 /N_2O	Yes	Significant source of emissions from incomplete combustion.
Delivery of thermal energy (Fossil Fuels)	Combustion of fossil fuels utilized for obtaining safe drinking water, displaced by the activity.	CO_2	Yes	Major source of emissions.
		CH_4 /N_2O	No	Excluded for simplification
Production of fuel, transport of fuel	Emissions are associated with production (e.g., charcoal production) and transport of the baseline fuel.	CO_2 CH_4 N_2O	Yes	Important lifecycle emissions. Included if the emission factor used incorporates these sources (Section 7|).

5.4 | Activity emissions

5.4.1 | The following table details the GHGs included in, or excluded from, the activity scenario(s).

Table 5. Sources of Activity Emissions

SOURCE	DESCRIPTION	GAS	INCLUDED?	JUSTIFICATION
Electricity Consumption	Emissions from electricity (grid or non-renewable off-grid) for operating activity water supply/treatment technology (e.g., UV systems, electric pumps).	CO_2	Yes	Potential source of emissions.
		CH_4 N_2O	No	Excluded for simplification
Fossil Fuel Consumption	Emissions from fossil fuels for operating activity water supply/treatment technology (e.g., backup generators).	CO_2	Yes	Potential source of emissions. Limited by applicability criteria (Section 3.2.1 |).
		CH_4	No	Excluded for simplification

5.5 | Leakage emissions

5.5.1 | The following table details the potential sources of leakage emissions that shall be assessed.

Table 6: Sources of Leakage Emissions

SOURCE	DESCRIPTION	GAS	INCLUDED?	JUSTIFICATION
Embodied Emissions (Upstream)	Cradle-to-gate emissions associated with the manufacturing and transport of the activity devices.	CO_{2e}	Yes	Mandatory Inclusion. Shall be accounted for using conservative defaults (Section 9|).
Market Effects (Fuel Availability)	Members of the population who do not participate in the activity, and previously used lower emitting energy sources, instead use the non-renewable biomass saved under the activity.	CO_{2e}	Yes	Potential source of leakage. Assessed via monitoring or default factor (Section 9|).

Compensation for Lost Co-benefits	The activity population compensates for the loss of co-benefits (e.g., the space heating effect of water boiling) by adopting other emitting practices or retaining some baseline fuel-burning practices.	CO_{2e}	Yes	Potential source of leakage. Assessed via monitoring or default factor (Section 9|).

6| DEMONSTRATION OF ADDITIONALITY

6.1 | Requirements

6.1.1 | The developer shall demonstrate that the activity would not have occurred without the incentive of the carbon revenues in accordance with the latest version of the *GS4GG Standard:* Requirements for Additionality Demonstration. The performance-based analysis pathway is not an eligible option under this methodology.

6.2 | Additionality Approach Selection

6.2.1 | The additionality shall be demonstrated by conforming to one of the options below:

a | **Positive List (Deemed Additionality):** the activity is deemed additional if it meets the positive list criteria for its technology type and geographical area (e.g. specific micro-scale activities in LDCs/SIDS). The positive list applied shall be valid at the activity's at the time of submission for Design Certification. The criteria and evidentiary basis are set out in Annex -5|.

b | **Activity-Specific Assessment:** where the activity does not qualify for a Positive List, additionality shall be demonstrated through a detailed assessment as described in this section.

6.2.2 | All activities, under either approach selected shall complete Regulatory Surplus Analysis (Section 6.3 |), Lock-In Risk Analysis (Section 6.4 |), and Common Practice Analysis (Section 6.7 |). Where activity-specific assessment is used, the developer shall also complete Investment Analysis (Section 6.5 |) and/or Barrier Analysis (Section 6.6 |).

6.3 | Regulatory Surplus Analysis

6.3.1 | The developer shall demonstrate that the emission reductions achieved by the activity are regulatory surplus - not required by any existing laws, regulations, or mandates (legal requirements), obligations within the host country's jurisdiction.

6.3.2 | The analysis shall verify that legal requirements do not:

a | Directly mandate the implementation of the mitigation activity;

b | Indirectly mandate the implementation of the mitigation activity by requiring a certain technological, performance, or management action, or by preventing alternative scenarios; or

c | Establish a support scheme (e.g., subsidy program) designed to achieve a quantitative target for the relevant technologies that would likely result in the same amount of emission reductions if the activity were not implemented.

6.3.3 | The assessment shall be conducted at the start of the 1st crediting period and reassessed at each renewal of the crediting period (Section 17|).

6.3.4 | **Exemptions:** The activity developer may submit credible, authoritative, and up-to-date evidence (e.g., independent market surveys, government implementation reports) demonstrating that the *de facto* market conditions involve systemic non-compliance with the regulation (e.g., widespread continued reliance on unimproved water sources or boiling despite formal policies), or that a government scheme lacks the operational funding, institutional capacity, or enforcement mechanisms to achieve its targets independently of carbon finance. For high-income countries, all legal requirements shall be deemed to be fully enforced, and this *de facto* non-enforcement exemption shall not apply.

6.3.5 | **Host Country Eligibility (Article 6 Negative List Assessment):** The activity developer shall demonstrate that the mitigation activity type is not excluded by the Host Country from participating in carbon market mechanisms. The activity developer shall verify that the activity technology (e.g., safe drinking water supply, water purification technologies) or measure is not included in any publicly available negative list or regulatory exclusion issued by the Host Country.

6.3.6 | **Demonstration of Compliance:** Compliance with this requirement shall be demonstrated through one of the following, as applicable, at the time of Validation (including PAA-Alignment Design Change validation for existing activities) and Crediting Period Renewal:

a | **Official List Review:** A citation of the Host Country's most recent official Article 6 policy framework, decrees, or public eligibility lists (e.g., a "Negative List" or "Ineligible Activity List") published by the Designated National Authority (DNA) or Article 6 Focal Point, confirming the activity is not excluded.

b | **Explicit Authorisation:** Provision of a Letter of Authorization (LoA) or No Objection from the Host Country's DNA that explicitly authorizes the mitigation activity type or sector.

c | **Confirmation of No Exclusion (Default):** In the absence of a published negative list, positive list, or specific regulatory exclusion, the activity developer shall provide a formal declaration confirming that no official communication or regulation has been issued by the

Host Country identifying the specific technology as ineligible for carbon crediting.

6.4 | Lock-In Risk Analysis

6.4.1 | The developer shall assess the risk that the activity locks-in GHG emissions, technologies, or carbon-intensive practices inconsistent with the host Country's NDC or the long-term goals of the Paris Agreement.

6.4.2 | **Assessment Framework and Exemption:** The assessment follows the framework established in the *GS4GG Standard: Requirements for Additionality Demonstration*:

a | **Short-lifetime safe harbour:** For technologies where the technical or operational lifetime is demonstrably less than 10 years (such as Ceramic Pot Filters (CPF), membrane/UV filters, and chlorine dispensers), it is assumed that no significant lock-in risk exists, provided the activity aligns with the host country's sustainable energy strategies.

b | **2030 Sunset Clause:** The validity of the 10-year exemption is limited to activities submitted for Design Certification on or before 31 December 2030.

c | **Full Assessment:** Technologies with lifetimes exceeding 10 years, or those submitted for Design Certification after the sunset clause, shall undergo an assessment following the GS4GG Methodology Tool – Lock in Risk Analysis (See 6.4.4 |).

6.4.3 | **Methodology-Level Determinations and Exemption Conditions:** Based on the assessment framework, the following criteria apply to applicable technologies. Activities may be exempted from further activity-level lock-in risk assessment if they meet these specific conditions:

a | **Full Exemption (Zero-Emission Technologies):** For technologies with zero operational emissions (e.g., gravity filters, handpumps, solar-powered pumps/treatment), although their lifespan may exceed 10 years (e.g., borehole infrastructure), they pass the Full Assessment as they are fully compatible with net-zero pathways;

b | **Conditional Exemption (Low-Emission Technologies):** For technologies utilizing grid electricity (e.g., electric pumps, UV disinfection systems), exemption is granted only if the activity developer provides verifiable evidence (e.g., manufacturer specifications) demonstrating that the specific model(s) being deployed have a technical or operational lifetime of 10 years or less;

c | **Fossil Fuel Backup:** The use of fossil fuel backup generators, strictly limited to 10% of operating hours (Section 3.2.1.2 |), does not trigger a full lock-in risk assessment for the primary technology, provided the primary technology meets the criteria for Full or Conditional Exemption.

6.4.4 | **Requirements for Full Lock-In Risk Assessment:** If the technology deployed does not meet the criteria for full or conditional exemption listed above in Section 6.4.3 |, the activity developer shall conduct a Lock-In Risk Assessment following GS4GG Methodology Tool – Lock in Risk Analysis.

6.5 | Investment/Financial Analysis

6.5.1 | The activity developer shall demonstrate that the mitigation activity is not financially viable without carbon credit revenue (Investment Analysis) OR that implementation would be prevented by significant barriers that carbon revenue helps overcome (Barrier Analysis).

6.5.2 | **Selection of Analysis Type:** The appropriate analysis type depends on the scale and context of the activity:

a | **Investment Analysis:** This approach shall be used for: i. Large-scale activities. ii. Activities implemented in large commercial/institutional facilities or centralized community systems (CWT/CWS) where standard financial investment appraisal is the norm.

b | **Barrier Analysis:** This approach may be used for: i. Micro-scale and Small-scale activities. ii. Activities implemented at individual households or small entities (e.g., schools, small enterprises) that typically do not have access to commercial or public third-party finance, or where non-financial barriers are the primary deterrent.

6.5.3 | **Requirements for Investment Analysis:** If Investment Analysis is selected, the activity developer shall conduct a Simple Cost Analysis, Benchmark Analysis, or Investment Comparison Analysis in conformity with the requirements of the A6.4-AMT-002: Investment analysis. The analysis shall demonstrate that:

a | The activity is not financially viable (e.g., fails to meet the required benchmark or is less attractive than alternatives) without carbon credit revenues; and

b | With carbon credit revenues, the activity becomes financially viable or the most attractive option.

6.6 | Barrier Analysis (optional alternative):

6.6.1 | For Micro-scale and Small-scale activities, if a standard investment analysis cannot be applied, the activity may undertake a barrier analysis to demonstrate that significant barriers (i.e., technological, institutional, financial, cultural, or related to ongoing maintenance and water quality monitoring) would prevent the implementation and continuous operation of the safe water activity in the absence of carbon finance. At least one barrier shall be substantiated with verifiable evidence (e.g., independent studies, publicly available surveys, national statistics).

6.6.2 | For Large-scale activities, Barrier Analysis may only be used in combination with Investment Analysis, with justification provided as to why the Investment Analysis alone is insufficient.

6.6.3 | The activity developer shall rigorously demonstrate that at least one plausible alternative to the mitigation activity does not face significant barriers, including those faced by the mitigation activity itself.

6.7 | Common Practice Analysis:

6.7.1 | All activities, including those on the Positive List, shall evaluate common practice per the GS4GG Tool: Common Practice Analysis (MT400-06). The activity developer shall assess the market penetration of equivalent technologies (i.e., those providing a similar level of service and meeting the methodology's quality standards) in the applicable geographic area. The technology is considered additional if the market penetration (excluding installations financed through international carbon mechanisms or climate finance) is below the applicable GS4GG threshold.

6.7.2 | For common practice analysis activity developers shall apply the following definitions and parameters:

a | **Assessment Approach and Indicator (P):** The Stock-Based Approach (assessing cumulative diffusion) shall be applied using a Count-based indicator (number of households/facilities).

b | **Data Vintage:** Data utilised shall be the most recent authoritative data available and shall not be older than five years prior to the submission of the PDD for Validation.

c | **Applicable Geographical Area (AGA):** The AGA shall be the Host Country. Sub-national or district-level AGA assessment (e.g., defining the boundary at the district or similar administrative level) is permissible if justified by localised market conditions or infrastructure divides between urban, peri-urban, and rural areas or if the activity developer can justify that the target demographic's market conditions, access, and affordability differ materially from national averages.

d | **Target Market Size** (P_{all})**:** The population within the AGA for whom the technology is technically applicable — i.e. those without access to verifiably safe drinking water, including those reliant on unimproved or surface sources and those whose nominally "improved" source does not meet the SDW definition. Socioeconomic segmentation is permitted only where affordability is a rigorously justified primary structural barrier.

e | **Similar Activities (P_{sim}) & Attribute Matrix:** per the Attribute Matrix (Tables 7–8); scale, market conditions, policy incentives and investment cost are not differentiating; activities supported by international climate finance, ODA or previously registered carbon-market schemes are excluded from P_{sim}.

6.7.3 | Common Practice Threshold (F_{max}): a uniform 25% across all regions and technology types. If $F = \frac{P_{sim}}{P_{all}}$ is ≥ F_{max}, the activity is common practice and not additional.

Table 7. Attribute Matrix for HWT/IWT

Attribute	Description	Required for Similarity (Yes/No)
Service Application	Used for treatment of drinking water at the household or institutional level.	Yes
Performance level	Meets the SDWS performance criteria (WHO 2-star/3-star or national standard)	Yes
Carbon-finance support	Supported by carbon/ODA/climate finance	Yes — excluded from P_{sim}.
Technology principle / scale / market / policy / cost	Specific treatment principle and commercial attributes	No

Table 3. Attribute Matrix CWS/CWT

Attribute	Description	Required for Similarity (Yes/No)
Service Application	Supply of safe water to a community at a collection point	Yes
Performance and service level	Meets microbial + chemical standards at PoC; ≥ Basic/Safely Managed service	Yes
Carbon-finance support	Supported by carbon/ODA/climate finance	Yes — excluded from P_{sim}
Technology type / scale / market / policy / cost	Borehole/spring/pump type and commercial attributes	No

6.8 | Ongoing Financial need

6.8.1 | At renewal of the crediting period, the additionality of the activity shall be reassessed in accordance with Section 7| of the GS4GG Additionality Standard.

6.8.2 | At the time of renewal of crediting period, the activity developer shall conduct an Ongoing Financial Need (OFN) assessment to demonstrate continued compliance with a. Regulatory surplus (mandatory), AND b. Investment analysis or Barrier analysis.

6.8.3 | **Positive List Exemption:** Activities that qualified for and remain eligible under a recognized GS4GG Positive List (Deemed Additionality) are exempt

from the Investment analysis or Barrier analysis demonstration at crediting period renewal.

6.8.4 | **Demonstration of OFN[2]:** For all other activities (those that transition from earlier versions or apply Activity-Specific Assessments), the developer shall demonstrate Ongoing Financial Need (OFN). This involves providing evidence (e.g. an updated financial analysis or funding assessment) that the activity still requires income from carbon credits to remain operational and sustainable in the renewed period.

7| BASELINE SCENARIO

7.1 | Baseline Determination (Stepwise Approach)

7.1.1 | The crediting baseline emissions (BE_y), shall be determined following the stepwise approach mandated by the *GS4GG Standard: Requirements for Baseline Determination in Methodologies*:

a | Step 1: Selection and Justification of the Baseline Approach (Section 7.2 |).

b | Step 2: Application of the selected approach prior to downward adjustment (Section 7.3 |).

c | Step 3: Application of the Downward Adjustment (Uncertainty and Ambition) (Section 7.4 |).

d | Step 4: Identification of a conservative Business-as-Usual (BAU) baseline (Section 7.5 |).

e | Step 5: Comparison and selection of the final Crediting Baseline (BE_y) (Section 7.6 |).

f | Δ_Y Transparent quantification of the difference between the BAU and the crediting baseline (Section 7.7 |).

7.2 | Step 1: Selection of and Justification of the Baseline Approach

7.2.1 | **Selection of Baseline Approach**: This methodology applies approach (c) from section 5.6.2 of the *GS4GG Standard: Requirements for Methodology Development*: An approach based on existing actual or historical emissions, adjusted downwards.

[2] Impact of Methodology Updates: Reductions in crediting volume resulting directly from mandatory methodology updates (e.g., the application of the Downward Adjustment Factor or revised fNRB rules) shall be recognized as a valid quantitative justification for demonstrating Ongoing Financial Need.

7.2.2 | **Justification for the Baseline Approach**: The selection of approach (c) is justified as follows:

a | **Appropriateness to activity context:** The baseline scenario is the purification of water through boiling. Emission reductions are calculated based on the volume of safe water the activity supplies, which displaces that boiling. This volume is based on historical consumption patterns or a normative consumption level (the Minimum Service Level).

b | **Ensuring conservativeness (downward adjustment):** The calculated emission reductions are adjusted downwards by:

i. Applying compliance and usage factors (Water Quality Modifier and Usage Rate) derived from rigorous sampling to account for actual activity performance

ii. Applying statistical conservativeness to account for measurement and sampling uncertainty, and

iii. Applying the Downward Adjustment Factor (DAF) for ambition over time (Section 7.4.5).

7.3 | Step 2: Application of the Selected Approach (Prior to Downward Adjustment)

7.3.1 | **Identification and Justification of the Baseline Scenario**: The baseline scenario is defined as the existing technology or practice used to obtain drinking water, identified as follows:

a | **General baseline scenario:** For end-users who boil unsafe water for drinking in the pre-activity situation, the baseline is the continuation of this practice (boiling) in the absence of the activity.

b | **Suppressed demand baseline scenario:** For end-users who drink unsafe water due to constraints such as energy poverty, the principles of suppressed demand are applied. The baseline scenario is the boiling of an adequate quantity of drinking water (the Minimum Service Level.

7.3.2 | **Suppressed demand applicability:** Suppressed demand may be claimed only within the following limits:

a | **Scale:** The suppressed demand baseline is limited to Micro-scale and Small-scale activities. Large-scale activities cannot apply a suppressed demand baseline and may only account for users that demonstrate boiling in the pre-activity scenario.

b | **Institutional End-Users:** Suppressed demand may be applied for institutional end-users, except where the institution is connected to a PDN supplying safe drinking water (unless justified that the supplied water quality does not meet the SDW definition, SDWS 12).

c | **Minimum Service Quality Standard (MSQS):** Activities applying suppressed demand shall meet the MSQS, ensuring the provision of at

least "Basic drinking water service" as defined by the WHO/JMP (Section 3.2.2 |).

7.3.3 | **Distinct baseline scenarios and technology types:** The activity developer shall identify distinct baseline scenarios (b) when the activity targets populations with significantly different fuel consumption patterns or baseline technologies (e.g., rural users predominantly using wood vs. urban users predominantly using charcoal).Where the activity includes different activity technology types (p), the developer shall analyse whether these technologies relate to different baseline scenarios. Multiple activity scenarios can be credited against the same baseline scenario if applicable.

7.3.4 | **Pre-activity conditions:** Each activity or VPA shall document the following pre-activity conditions that define the specific baseline scenario of the end-user group(s):

a | **Pre-activity practices (boiling, or drinking unsafe water under suppressed demand):** drinking water sources and/or treatment technologies available and used in the activity boundary (Section 2 for source definition and 0 for further details and SDWS 5).

b | **Efficiency of water boiling systems:** the baseline stove or water boiling technologies for their thermal efficiency within the activity boundary (SDWS 6 and SDWS 11).

c | **Baseline fuels:** the baseline cooking fuels and/or water -boiling fuels used within the activity boundary (SDWS 8).

7.3.5 | **Consistency Check (Baseline scenario vs recruited Households):** The activity developer shall verify that the fuel mix and household characteristics determined for the baseline scenario (via the Baseline Scenario Survey) are representative of the actual households recruited into the activity, using retrospective questions asked during the first usage survey conducted in each household

7.3.5.1 | **Standardized retrospective survey:** The survey shall utilise standardised retrospective questions encompassing the following minimum parameters and the recall period for these questions shall be standardized across the activity as "the typical water boiling and fuel use habits during the 30 days prior to receiving the activity stove.

a | Baseline drinking -water practice (e.g., boiling, filtering, purchasing, or suppressed demand).

b | Primary & secondary baseline fuel type and water boiling technology.

c | Household size with age -disaggregated population(s).

7.3.5.2 | **Assessment of material discrepancy:** A material discrepancy occurs if the actual field population presents a lower-emitting profile or a smaller population than the ex-ante assumptions, defined as:

a | The actual proportion of water boiling events using the primary high-emitting fuel type is lower than the baseline scenario estimate, where the difference results in higher ex-ante baseline emissions; AND/OR

b | The actual average household size is smaller than the baseline scenario estimate.

7.3.5.3 | **Resolutions:** Where a material discrepancy occurs, the activity developer shall resolve it by applying the following threshold-based approach:

a | **Cluster Separations:** Activity developers may use cluster separations (e.g., stratifying the population strictly by primary single-fuel users vs. mixed-fuel users) to resolve apparent discrepancies and improve demographic matching prior to applying adjustments. However, any cluster separations utilized shall be based on objective stratifications explicitly defined ex-ante in the registered PDD or Baseline Scenario Survey.

b | **Deviations below the Validity Threshold (≤ 20%):** If the absolute deviation between the baseline estimate and the actual deployed population is 20% or less, the activity developer shall apply a conservative adjustment to the baseline emission calculations. The calculations shall be adjusted to match the empirically observed, lower-emitting household profile to prevent over-crediting.

c | **Deviations exceeding the Validity Threshold (> 20%):** If the deviation exceeds 20%, the shift is deemed a fundamental divergence from the target demographic. The original Baseline Scenario is statistically invalid for that specific cohort, and the activity developer shall formally redefine the baseline scenario via a new Baseline Scenario survey.

d | **Prohibition on Exclusion:** Activity developers shall not arbitrarily exclude non-conforming, lower-emitting households from the monitoring sample solely to artificially force compliance with an aggressively high baseline.

7.3.6 | **Baseline Duration and Updates and Cross-Effects**

7.3.6.1 | **Non-industrial Applications:** For households, residential, institutional, and commercial applications, the baseline is considered fixed for the duration of the 5-year crediting period. It shall be reassessed at the renewal of the crediting period (Section 17|).

7.3.6.2 | Where the activities cover households that already use other improved technologies (such as efficient cookstoves), interactions between technologies shall be accounted for by the activity developer. The more efficient technology shall be used as the baseline reference. If an improved cookstove is adopted by a household during the crediting period, baseline emissions shall be recalculated from that adoption date forward using the new cookstove as the baseline.

7.3.7 | **Determination of Baseline Emission Factor (EF_b)**

7.3.7.1 | The baseline emission factor represents the emissions associated with purifying 1 Liter of water using the baseline technology and fuel mix.

$$EF_b = SE_{w,b,y} \times \frac{\sum_f \left(x_f \times \left(EF_{b,f,CO2} \times f_{NRB,f,y} + EF_{b,f,non-CO2}\right)\right)}{10^9}$$

Eq. 1

Where:

EF_b	=	Emission factor for the use of fuel to obtain safe water in the baseline (tCO_2e/L)
$SE_{w,b,y}$	=	Specific energy required to boil water (kJ/L) (eq.2)
x_f	=	Proportion of fuel f used in the baseline (fraction, energy basis)
$EF_{b,f,CO2}$	=	CO_2 emission factor from use of fuel f (tCO_2/TJ) (SDWS 9)
$f_{NRB,f,y}$	=	Fraction of non-renewable biomass (SDWS 24). Note: If the baseline fuel is fossil fuel, $f_{NRB} = 1.0$. (fraction)
$EF_{b,f,non-CO2}$	=	Non-CO_2 emission factor from use of fuel f (SDWS 10). Note: Set to 0 if the baseline fuel is a fossil fuel and non-CO2 emissions are excluded. (tCO_2e/TJ)
f	=	Index for baseline fuel types
10^9	=	Unit conversion from kJ to TJ ($kJ \cdot TJ^{-1}$)

7.3.8 | **Specific Energy Required to Boil Water** ($SE_{w,b,y}$): The specific energy is determined by the energy input required to obtain 1 L of boiling water, accounting for boiling and vaporization losses (based on 5 minutes of boiling), and the efficiency of the baseline technology.

$$SE_{w,b,y} = {}^{360.83}/_{\eta_{wb}}$$ Eq. 2

Where:

360.83	=	Default amount of energy required to obtain 1 L of water after 5 minutes of boiling with 1% evaporative loss (first principles energy approach) (kJ/L)
η_{wb}	=	Efficiency of the stoves for baseline water boiling (Weighted average) (SDWS 11) (%); defaults: three-stone 15%, other conventional 25%, ICS 30%

7.3.9 | **Unadjusted Baseline Emissions ($BE_{unadj,y}$)**: The Unadjusted Baseline Emissions ($BE_{unadj,y}$) are calculated prior to adjustments for compliance, usage, uncertainty, and ambition.

$$BE_{unadj,y} = EF_b \times (1 - C_b) \times Q_{y,unadj}$$ Eq. 3

Where:

$BE_{unadj,y}$ = Unadjusted baseline emission in year y (tCO_2e/yr)

C_b = Proportion of activity end-users already using a safe water supply that did not require boiling in the baseline (SDWS 12) (fraction).

$Q_{y,unadj}$ = Unadjusted quantity of safe drinking water provided by the activity in year y (L)

7.3.10 | **Unadjusted Quantity of Safe Drinking Water ($Q_{y,unadj}$)**: The quantity of safe drinking water provided by the activity ($Q_{y,unadj}$) is calculated using one of two methods.

a | **Method 1 - CWT and CWS technologies:** The quantity is determined by the monitored volume supplied, capped by the population's consumption capacity.

$$Q_{y,unadj} = min(Q_{m,y}, Q_{pop,y}) \qquad \text{Eq. 4}$$

Where:

$Q_{m,y}$ = Monitored quantity of safe water provided by the activity in year y (L). (SDWS 28)

$Q_{pop,y}$ = Quantity of safe drinking water that could be consumed by activity end-users in year y (L)

$$Q_{pop,y} = \sum_p HH_{p,y} \times HN_{p,y} \times QPW_p \times DO_{p,y} \qquad \text{Eq. 5}$$

Where:

$HH_{p,y}$ = Number of premises type p served by the activity (SDWS 31)

$HN_{p,y}$ = Number of individuals per premises type p (SDWS 30)

QPW_p = Volume of drinking water per person per day (SDWS 29)

$DO_{p,y}$ = Days the activity technology is operational (SDWS 32)

b | **Method 2 - HWT and IWT technologies:** The quantity is determined by the number of units and the volume of water consumed per premises. (Note: The Usage Rate is applied later in Step 3 as a downward adjustment).

$$Q_{y,unadj} = \sum_p (N_{p,y} \times QPW_{hh,p,y} \times DP_{p,y}) \qquad \text{Eq. 6}$$

Where:

$N_{p,y}$ = Number of premises type p with at least one activity technology (SDWS 33)

$QPW_{hh,p,y}$ = Volume of drinking water per premises p per day. The volume of drinking water per premises is determined per

eq.7 by the capacity of the device, capped by the population's consumption capacity

$DP_{p,y}$ = Days the activity technology is present in the premises (SDWS 36)

$$QPW_{hh,p,y} = min\left(\left(q_i \times t_{p,y} \times DN_{p,y}\right), \left(QPW_p \times HN_{p,y}\right)\right) \quad \text{Eq. 7}$$

Where:

q_i = Capacity of the individual activity technology (SDWS 13). For households with multiple water treatment technologies, the aggregated flow rate capacity of all operational units present in the premises shall be used. *(Note: This ensures that having multiple filters does not allow a household to claim more water consumption than the people can physically consume and allocated cap).*

$t_{p,y}$ = Usage time of the activity technology by premises p in year y (h/day) (SDWS 35)

$DN_{p,y}$ = Average number of individual technologies per premises p, in year y (SDWS 37)

QPW_p = Volume of drinking water per person per day for premises type p (SDWS 29)

$HN_{p,y}$ = Number of individuals per premises p in year y (SDWS 30)

7.3.11 | **Water Volume Defaults and Caps (QPW_p)**: The parameter QPW_p (Volume of drinking water per person per day) shall be determined using the defaults below or monitored values (Water Consumption Field Test - WCFT), subject to the caps defined below (SDWS 29). When Option 1 (Default Values) is selected for QPW_p to claim suppressed demand, a mandatory 5% deduction shall be applied to the values listed in Table 9 to ensure conservativeness ($QPW_p = QPW_{p\text{Table8}} \times 0.95$).

Table 9. Tiered Caps and Institutional Defaults for Water Volume(QPW_p)

Category	User Group	Default Value (Drinking Water Only) L/person/day	Cap (Drinking Water Only) L/person/day
Household / Residential (Users present 24 hrs)	Children (< 5 years)	0.9	1.3
	Children & Adolescents (5-18 years)	3*	4.5*
	Adults (19+ years)	4.0	5.5
Institutional (Partial-Day) (Users present < 12 hrs)	Day Students (Schools)	2.0 **	3.0 **
	Employees / Day Patients	2.0	3.0

Institutional (Full-Day)	Boarding Students / In-Patients	Use Residential Age-Specific Caps

**Note (HWT Overlap): If an HWT activity overlaps with a School IWT activity, the HWT activity must apply a deduction to this 3.0 L default (e.g., 3.0 L - 2.0 L = 1 L) for the overlapping population.*

***Note (School Take-Home): Activities are not permitted to claim up to the full age-specific cap for Day Students.*

7.4 | Step 3: Application of the Downward Adjustment

7.4.1 | **Adjustment for behaviour and Compliance** ($Q_{y,adj}$): The unadjusted quantity of water ($Q_{y,unadj}$) shall be adjusted downwards by factors related to actual usage behavior and compliance with water quality standards.

$$Q_{y,adj} = Q_{y,unadj} \times \left(1 - X_{cleanboil,y}\right) \times M_{q,y} \times U_{p,y} \qquad \text{Eq. 8}$$

Where:

$Q_{y,adj}$	=	Adjusted quantity of safe drinking water in year y
$X_{cleanboil,y}$	=	Proportion of end-users that boil safe (activity) water (SDWS 26)
$M_{q,y}$	=	Modifier for the water quality (fraction passing) (SDWS 22). Section 7.4.2 |
$U_{p,y}$	=	Usage rate of the activity technology (SDWS 34). Applies only to Method 2 (HWT/IWT). For Method 1 (CWT/CWS), $U_{p,y} = 1$.

7.4.2 | **Treatment of sampling uncertainty:** Uncertainty associated with these parameters is managed by requiring 90/10 precision (90% confidence, 10% margin of error) for the sampling results (See Section 14.5 |):

a | If the (90/10) precision is met: The Mean value shall be used.

b | If the (90/10) precision is NOT met: Statistical conservativeness is mandatory. The Lower Bound of the one-sided 90% confidence interval shall be used for $M_{q,y}$ and $U_{p,y}$. The Upper Bound of the one-sided 90% confidence interval shall be used for $X_{cleanboil,y}$.

7.4.3 | **Water Quality Modifier ($M_{q,y}$) Requirements**: $M_{q,y}$ is the fraction of samples that pass the microbial quality standard requirements (Section 3.2.2 |).

a | **Point of Use (PoU) Testing:** $M_{q,y}$ shall be determined by testing at the PoU (as defined in Section 2|), as this reflects the actual safety of the water consumed and validates the displacement of baseline emissions. (See Section 14.4.2 | for complementary PoC testing requirements).

b | **Proportional Crediting:** Emission reductions are credited proportionally to the value of $M_{q,y}$.

c | **Mandatory Corrective Action:** If the proportion of samples failing the quality standards exceeds the thresholds below, the activity developer shall implement a mandatory, time-bound corrective action plan and enhanced monitoring. Thresholds (Failure Rate): Year 1: 20%; Year 2: 15%; Year 3+: 10%.

d | **Consequence of Non-Improvement:** If the subsequent round of testing *following* the implementation of the Corrective Action Plan (CAP) still shows a failure rate exceeding the applicable threshold, crediting shall be suspended for the specific technology type or stratum involved until a subsequent test demonstrates compliance.

7.4.4 | **Uncertainty-Adjusted Baseline Emissions ($BE_{unc,y}$)**: The Baseline Emissions adjusted for uncertainty and compliance ($BE_{unc,y}$) are calculated substituting $Q_{y,adj}$ into the baseline equation.

$$BE_{unc,y} = EF_b \times (1 - C_b) \times Q_{y,adj} \quad \text{Eq. 9}$$

Where:

$BE_{unc,y}$	=	Baseline Emissions adjusted for uncertainty in year y (tCO_2e/yr)
EF_b	=	Emission factor for the use of fuel to obtain safe water in the baseline (tCO_2e/L)
C_b	=	Proportion of activity end-users already using a safe water supply that did not require boiling in the baseline (fraction)
$Q_{y,adj}$	=	Adjusted quantity of safe drinking water in year y (L)

7.4.5 | **Adjustment For Ambition (DAF)**: The Downward Adjustment Factor ($DAF_{NetZero}$) shall be applied to the Uncertainty-Adjusted Baseline Emissions to encourage ambition over time. This factor shall be sourced from the GS4GG Methodology Tool: DAF Determination. The downward adjusted baseline emissions ($BE_{adj,y}$) are calculated as follows:

$$BE_{adj,y} = BE_{unc,y} \times (1 - DAF_{NetZero}) \quad \text{Eq. 10}$$

7.5 | Step 4: Identification and Calculation of the Conservative BAU Scenario

7.5.1 | The conservative BAU scenario accounts for uncertainty and compliance but excludes the ambition adjustment (DAF).

$$BAU_y = BE_{unc,y} \quad \text{Eq. 11}$$

7.6 | Step 5: Comparison and Selection of the Crediting Baseline (BE_y)

7.6.1 | The final Crediting Baseline (BE_y) shall be the lower value between the downward adjusted baseline emission ($BE_{adj,y}$) and the conservative BAU (BAU_y).

$$BE_y = MIN(BE_{adj,y}, BAU_y) \qquad \text{Eq. 12}$$

7.7 | Transparency Check: Difference between BAU and Crediting Baseline

7.7.1 | As required by the GS4GG Methodology Standard: Requirements for Baseline Setting, the difference between the conservative BAU emissions (BAU_y) and the final crediting baseline emissions (BE_y) shall be quantified and reported transparently in the Monitoring Report. This difference represents the emissions excluded from crediting due to the application of the DAF for ambition - the host-Party mitigation contribution.

$$\Delta_y = BAU_y - BE_y \qquad \text{Eq. 13}$$

Where:

Δ_y	=	Emissions excluded from the crediting baseline due to ambition adjustment (DAF) in year y
BAU_y	=	Conservative Business-as-Usual emissions in year y
BE_y	=	Crediting Baseline Emissions in year y

8| ACTIVITY EMISSIONS

8.1 | Identification of the Activity Scenario

8.1.1 | The activity scenario is defined by the operation of the new or rehabilitated zero- or low-emission water treatment/supply technologies installed by the activity.

8.1.2 | When different activity technologies are included in a single activity, the developer shall analyse whether multiple activity scenarios (p) should be identified.

8.1.3 | Activity technologies with similar design and performance characteristics may be included under a single activity scenario. Similarity is defined as technologies based on the same fundamental technology (e.g., treatment mechanism or pumping principle) whose respective treatment or supply capacities (e.g., flow rate in L/h or m³/day) do not differ by more than +/-5% in absolute terms from the design implemented most frequently.

8.1.4 | Technologies with significantly different performance characteristics (more than +/-5%) shall be treated as independent activity scenarios and monitored and calculated separately.

8.2 | Calculation of Activity Emissions

8.2.1 | Activity emissions (AE_y) shall include emissions from electricity and fossil fuels required to operate activity technologies. Where the activity uses only zero-emission technologies with no fossil-fuel or grid-electricity input, AE_y = 0

$$AE_y = AE_{ff,py} + AE_{ec,p,y} \qquad \text{Eq. 14}$$

Where:

AE_y	=	Total activity Emissions in year y (tCO_2e/yr)
$AE_{ff,py}$	=	Activity emissions from fossil fuel use (Eq. 15) (tCO_2e/yr)
$AE_{ec,p,y}$	=	Activity emissions from electricity use (Eq. 16) (tCO_2e/yr)

8.2.2 | **Activity emissions from fossil fuel use ($AE_{ff,py}$)**: Emissions from fossil fuel use (e.g., backup generators) are determined as follows:

$$AE_{ff,py} = \sum P_{p,f,y} \times NCV_f \times EF_f \qquad \text{Eq. 15}$$

Where:

$P_{p,f,y}$	=	Quantity of fossil fuel f consumed by activity scenario p in year y (mass or volume unit) (SDWS 38)
NCV_f	=	Net calorific value of fossil fuel f (TJ per fuel unit) (SDWS 14)
EF_f	=	CO_2 emission factor of fossil fuel f (tCO_2/TJ); non-CO_2 components added where material (SDWS 9/10). Activity emissions of CH_4 and N_2O from fossil fuel combustion may be excluded for simplification.

8.2.3 | **Activity emissions from electricity use** ($AE_{ec,p,y}$): Emissions from electricity use (e.g., grid-connected pumps, UV systems) are estimated as follows:

$$AE_{ec,p,y} = \sum EC_{p,y} \times EF_{ec} \times (1 + TDL_{ec}) \qquad \text{Eq. 16}$$

Where:

$EC_{p,y}$	=	Quantity of electricity consumed by the activity technology in year y (kWh) (SDWS 39)
EF_{ec}	=	Emission factor associated with the electricity use (tCO_2/kWh), from the applicable grid / generation emission-factor source) (SDWS 16)
TDL_{ec}	=	Transmission and distribution losses (%) (SDWS 17)

9| LEAKAGE EMISSIONS

9.1 | Identification of Leakage Emission Sources

9.1.1 | Leakage (LE_y) refers to the net change of anthropogenic GHG emissions occurring outside the activity boundary that are attributable to the activity. Two primary categories of leakage shall be accounted for:

a | **Embodied Emissions (Upstream)** - the cradle-to-gate embodied emissions of manufacturing and transporting the activity devices (Section 9.2 |).

b | **Market and Behavioral Leakage** - market effects on fuel availability and behavioural responses to the avoided boiling (Section 9.3 |).

$$LE_y = LE_{Embodied,y} + LE_{Market,y} \quad \text{Eq. 17}$$

Where,

LE_y = Total Leakage Emissions in year y (tCO_2e/yr)

$LE_{Embodied,y}$ = Leakage due to embodied emissions in year y (tCO_2e/yr) (Eq 18)

$LE_{Market,y}$ = Leakage due to market and behavioral effects in year y (tCO_2e/yr) (Eq 19 or Eq 20)

9.2 | Embodied Emissions ($LE_{Embodied,y}$)

9.2.1 | In compliance with cradle-to-gate assessment requirements, embodied emissions associated with the manufacturing and transport of the activity devices shall be accounted for (Section 5.4 |). To keep the assessment simple and conservative, a standardised default deduction is applied once for each new activity-technology unit disseminated or system installed.

Table 10. Default Deductions for Embodied Emissions

Technology Category	Representative Technologies	Default Deduction $EF_{emboided,default}$ t CO2e per unit/system
HWT / IWT	Basic Filters (Ceramic, Sand, Dispensers)	0.008
	Advanced Treatment (Membrane, UV)	0.012
	Biosand filters – Concrete	0.065
	Biosand filters - Plastic	0.025
CWT / CWS	Rehabilitation (Pump/Hardware only)	1.00
	CWT Kiosk (Treatment infrastructure)	2.00
	New Borehole / Mechanized System	4.50

9.2.2 | Calculation and Amortisation of Embodied Emissions

9.2.2.1 | The activity developer shall apply one of two pathways for the deduction of embodied emissions, contingent upon the verifiable technical lifetime of the activity device (as established via options listed under Parameter.

a | **Short-Lived Technologies (Technical Lifetime < 5 years/ Optional for others):** For technologies where the activity developer prefers a simplified one-time deduction the total embodied emissions shall be deducted entirely upfront during the first monitoring period for that specific unit or system.

$$LE_{Embodied,y} = N_{dissmenated,y} \times EF_{Embodied,default} \quad \text{Eq. 18}$$

Where,

$LE_{Embodied,y}$	=	Leakage due to embodied emissions in year y (tCO2e/yr)
$N_{dissmenated,y}$	=	Number of new technology units or systems disseminated/installed in year y (SDWS 41)
$EF_{Embodied,default}$	=	Embodied emission factor per device/system tCO_2e/unit (Table 10 default, or activity-specific LCA value) (tCO_2e/unit)

b | **Durable Technologies (Technical Lifetime ≥5 years)**: The total embodied emissions shall be amortized (distributed evenly) over the duration of the First Crediting Period (5 years). The annual deduction shall be applied to the cumulative cohort of disseminated devices for exactly five full years from their respective dates of commissioning, regardless of whether individual units break or drop out of the active operational fleet. The annual deduction is:

$$LE_{Embodied,y} = N_{disseminated,y} \times \left(\frac{EF_{embodied,default}}{5}\right) \quad \text{Eq. 19}$$

Where,

$LE_{Embodied,y}$	=	Leakage due to embodied emissions in year y (tCO_2e/yr)
$N_{disseminated,y}$	=	Number of new activity technology units disseminated in year y (SDWS 41)
$EF_{Embodied,default}$	=	Embodied emission factor per tCO_2e/unit (Table 10 default, or activity-specific LCA value) (tCO_2e/unit)
5	=	Duration of 1st crediting period over which emissions are amortized (years)

c | **Mandatory True-Up Provision:** If an activity utilizing approach b ceases verification or permanently terminates prior to the completion of the 5-year 1st Crediting Period, the activity developer shall conduct

a true-up calculation at the final issuance event. Any remaining unaccounted embodied emissions for the entire historically disseminated device fleet shall be deducted in full, from the final issuance request.

9.3 | Market and Behavioral Leakage ($LE_{Market,y}$)

9.3.1 | This category addresses potential leakage relating to ~~fuel consumption~~ (non-renewable woody biomass (NRB)) and behavioral changes (Section 5.5 |). The following sources shall be evaluated:

9.3.1.1 | **Market Effects (Fuel Availability):** The risk of diverted fuel being used by non-participants is assessed as low but shall be accounted for.

9.3.1.2 | **Compensation for lost co-benefits:** The risk of households burning additional fuel to compensate for heat lost from avoided boiling is deemed negligible for SDWS activities. This is due to the short duration of the boiling activity and its typical concurrency with primary cooking. No deduction is required for this source.

9.3.2 | **Assessment Options**: The activity developer shall determine Market Leakage ($LE_{Market,y}$) following one of the following options below.

a | **Option 1 (Default):** Apply a conservative 2% deduction to the Net Emission Reductions.

$$LE_{Market,y} = \left(BE_y - AE_y\right) \times 0.02 \qquad \text{Eq. 20}$$

b | **Option 2: Detailed Assessment:** The activity developer may opt to conduct a detailed, quantitative assessment.

i. The activity documentation shall include an evidence-based description and quantification of each potential source identified in Section 9.3.1 |

ii. The monitoring plan shall include parameters to monitor these sources. A leakage investigation shall be conducted every two years. (SDWS 40)

iii. Leakage risks deemed demonstrably negligible (<2%) can be ignored, provided the case for their insignificance is substantiated.

$$LE_{Market,y} = \sum LE_{source,y} \qquad \text{Eq. 21}$$

10| NET GHG EMISSION REDUCTIONS/REMOVALS

10.1 | Calculation of net GHG emission reductions

10.1.1 | The Net Emission Reductions (ER_y) are the final result of the quantification process, calculated by subtracting Activity Emissions and Leakage Emissions from the final Crediting Baseline.

$$ER_y = (BE_y - AE_y) - LE_y \qquad \text{Eq. 22}$$

Where,

ER_y	=	Net emission reductions in year y (tCO₂e/yr)
BE_y	=	Crediting baseline emissions in the monitoring period y(tCO2e/yr) (Section 7.6.1 |, Eq 12)
AE_y	=	Activity emissions in the monitoring period y (tCO2e/yr) (Section 8|, Eq 14)
LE_y	=	Total leakage emissions in the monitoring period y (tCO2e/yr) (Section 9|, Eq 17)

11| MEETING METHODOLOGICAL PRINCIPLES

11.1 | Encouraging ambition over time

11.1.1 | The methodology ensures the encouragement of ambition over time through the following mandatory mechanisms:

a | **Downward Adjustment Factor (DAF) -** The methodology mandates the application of the DAF (Section 7.4.5 |), sourced from the *GS4GG Methodology Tool: DAF Determination*, which systematically lowers the crediting baseline each year on the basis of the host country's long-term Net-Zero trajectory or the established ambition floor.

b | **Baseline Reassessment -** The baseline scenario and associated parameters (e.g., fuel mix, technology types, fNRB) are reassessed at each renewal of the crediting period (Section 17|) so the baseline reflects updated circumstances, technological advancements, and policy developments in the host country.

c | **Dynamic Performance Monitoring** - rigorous annual monitoring of water quality compliance ($M_{q,y}$) and usage rates ($U_{p,y}$) captures actual performance; - combined with mandatory corrective action requirements (Section 7.4.3 |). This incentivizes continuous improvement in service delivery and hygiene education.

11.2 | Equitable sharing of mitigation benefits

11.2.1 | The methodology promotes the equitable sharing of benefits by operating under the GS4GG Community Services Activity (CSA) Requirements. Adherence to the GS4GG Safeguarding Principles & Requirements and to robust Stakeholder Consultation (as mandated by the CSA) protects the rights and interests of local stakeholders, including end-users, are protected and that benefits are shared fairly.

11.2.2 | The activity provides direct co-benefits, primarily improved health through access to safe drinking water (SDG 6) and time or monetary savings related to the avoidance of fuel acquisition for boiling.

11.2.3 | **Inclusivity Provision:** Specific provisions designed to ensure climate finance reaches marginalised and underserved populations by allowing the suppressed demand baselines for energy-poor populations (Section 7.3.5 |).

11.3 | Avoidance of double counting

11.3.1 | Explicit requirements (Section 3.2.8 |) to mitigate the risk of double counting (double issuance, double use, and double claiming):

a | **Ownership Rights:** Mandates clear communication and contractual assertion of ownership rights over the emission reductions with all activity participants, manufacturers, and retailers (SDWS 18).

b | **End-User Notification:** Requires informing end-users that they cannot claim the emission reductions generated by the activity (SDWS 20).

c | **Exclusion:** Requires the exclusion of technologies already included in any other voluntary or compliance carbon market mechanism (SDWS 19).

d | **Unique Identification:** Requires the unique identification and tracking of all distributed activity units or households served in a activity database (Section 14.1 |) to prevent the same intervention from being claimed multiple times.

e | **Cross-Activity Effects:** Includes specific requirements for addressing overlap with Improved Cookstove (ICS) activities to ensure the same fuel savings are not claimed by both activities.

11.4 | Aligning with NDC and LT-LEDS

11.4.1 | The methodology ensures alignment with the host country's NDCs and LT-LEDS:

a | **DAF Alignment:** The DAF (Section 7.4.5 |) is explicitly derived from the host country’s national Net-Zero targets, keeping the baseline trajectory consistent with the national long-term decarbonisation pathway.

b | **Activity relevance:** Safe drinking water using zero or low-emission technologies, and the associated reduction of non-renewable biomass consumption, are development and mitigation strategies commonly reflected in the NDCs of many developing countries.

c | **Avoidance of Lock-In:** The Lock-In Risk Analysis (Section 6.4 |) confirms that the activity uses technologies compatible with long-term climate goals and avoids creating path dependencies on carbon-intensive infrastructure.

11.5 | Encouraging Broad Participation

11.5.1 | The methodology encourages broad participation through flexibility and scalability:

a | **Scalability:** Applicable to Micro, Small, and Large-scale activities across household, institutional, and commercial sectors.

b | **Technology Neutrality:** Covers a wide range of technologies (HWT, IWT, CWT, CWS) and energy sources (including renewable and grid electricity).

c | **Methodological Flexibility:** Offers two distinct calculation methods to accommodate different implementation models (centralized vs. decentralized). It also provides flexibility in monitoring (e.g., allowing validated field kits and alternative flow measurement where appropriate) to reduce barriers in remote or low-resource settings.

i. **Standardisation:** Standardized approaches for complex parameters (e.g., fNRB, Leakage options) to reduce transaction costs while maintaining rigor.

ii. **Programmatic Approach:** Highly suitable for aggregation under Programmes of Activities (PoA) (Section 16|)

11.6 | Including Data Sources, Accounting for Uncertainty, and Monitoring

11.6.1 | The methodology ensures robustness in data use, uncertainty management, and monitoring:

a | **Data sources:** Mandates high-quality data. Core compliance parameters ($M_{q,y}$, $U_{p,y}$) shall be determined via direct field measurement (water quality testing, usage surveys). Other parameters (fNRB, EFs) shall use recognized sources (IPCC, standardized tools) or validated activity-specific data.

b | **Accounting for uncertainty:** Uncertainty is explicitly addressed and quantified (Section 13|). Mandatory statistical conservatism (Section 7.4.1 |) is applied if precision targets (90/10 rule) are not met, ensuring the resulting Net GHG Emission Reductions are conservative.

c | **Monitoring:** A rigorous monitoring plan is required (Section 14|), including annual compliance monitoring and specific QA/QC requirements for data collection (e.g., field kit validation, PoU and PoC testing).

11.7 | Taking into Account Policies, Measures, and Relevant Circumstances

11.7.1 | The methodology accounts for relevant policies and circumstances:

a | **Policies and measures (regulatory surplus):** The mandatory Regulatory Analysis (Section 6.3 |) ensures that the activity is surplus to existing laws and regulations concerning safe water supply.

b | **Policies and measures (Ambition):** The DAF ensures the baseline trajectory accounts for the ambition reflected in national policies (Net-Zero targets).

c | **Relevant circumstances:** The determination of the baseline scenario is based on actual local circumstances regarding water access, boiling practices, fuel types, and the identification of suppressed demand conditions where relevant.

12| REVERSALS

12.1 | Assessment of Reversal Risks

12.1.1 | The activity generates GHG emission reductions by avoiding the combustion of non-renewable biomass, thereby relieving pressure on existing carbon stocks in the relevant greenhouse gas reservoirs (forests and woodlands). The methodology does not generate credits for quantified carbon stock sequestered or its avoided loss.

12.1.2 | While the avoidance of the specific combustion event is immediate and permanent, the biomass stocks preserved by the activity remain subject to potential future depletion due to natural disturbances (e.g., fires, pests) or anthropogenic drivers (e.g., land clearance).

12.1.3 | In the context of decentralized safe water supply activities, the activity developer operates the technology distribution and data management infrastructure but possesses no legal control, land tenure, or management authority over the physical greenhouse gas reservoir (the forest or land area). Consequently, the activity is formally classified under the "No Control" exemption regarding the carbon reservoir. Non-permanence buffer pool deductions are therefore fundamentally inappropriate for avoidance activities applying this methodology and shall not be required.

12.2 | Mitigation and Management of Reversal Risks

12.2.1 | Pursuant to the "No Control" status of the activity developer over the reservoir, this methodology applies an alternative approach to address non-permanence risk through dynamic monitoring supplemented by a stability assessment with any necessary adjustments applied to subsequent crediting periods.

12.2.2 | The non-permanence risk to the biomass reservoir shall be mitigated and managed through the mandatory periodic updating of the fNRB parameter and the baseline fuel scenario, subject to the following safeguards at the time of crediting period renewal (Section 17|):

a | **Dynamic fNRB Updating:** The fNRB parameter shall be periodically updated utilizing the latest versions of approved standardized science-based tools (e.g., MoFuSS or A6.4 fNRB Tool – default values) to accurately reflect the current physical reality of the biomass reservoir.

The updated fNRB value shall be applied to the subsequent crediting period. If the updated fNRB value decreases, the lower value shall be applied without further justification. If the updated fNRB value increases, the activity developer shall justify the continued use of the higher value by demonstrating that users still source wood from the same area.

b | **Catastrophic Disturbance & Biomass Availability Check:** The activity developer shall conduct a qualitative assessment of the biomass supply area using available evidence (e.g., satellite imagery, government forestry reports). If a catastrophic disturbance event (e.g., severe wildfires or rapid mass land-use conversion to agriculture/urbanization) has effectively depleted the historic biomass reservoir, OR if the updated fNRB calculates a mathematically higher fraction of non-renewability than the previous crediting period, the Baseline Fuel Scenario (Section 7.3.1 |) shall be formally re-evaluated.

i. **Baseline Validation:** If the assessment confirms that the historic woody biomass resource is no longer physically available or accessible to the target population due to severe depletion, the activity developer shall empirically demonstrate (via an updated baseline survey) the actual alternative fuels the population has been forced to adopt (e.g., renewable agricultural residues, dung, or fossil fuels). The baseline scenario shall be formally updated to reflect these alternative fuels, thereby organically adjusting the crediting baseline to match post-disturbance realities and preventing over-crediting for non-existent resources.

12.3 | Addressing Reversals

12.3.1 | Because the mitigation outcome is generated via avoidance (not sequestration), and the risk of macro-level non-permanence is addressed ex-ante for future crediting periods via the dynamic updating of the fNRB and baseline fuel scenario, retrospective cancellation of credits or contributions to a Reversal Risk Buffer Pool are not required.

13| UNCERTAINTY QUANTIFICATION

13.1 | Approach to Uncertainty Management

13.1.1 | The methodology quantifies uncertainty to ensure conservative Net GHG Emission Reductions. This approach combines standardisation for minor parameters with mandatory statistical quantification for major parameters.

13.1.2 | **Standardization and Defaults:** Uncertainty for non-measured parameters (e.g., NCV, emission factors, embodied-emission and leakage defaults) is managed using conservative IPCC or methodology defaults. For fNRB,

uncertainty is managed through conservativeness built into the approved tools.

13.1.3 | **Statistical Conservativeness:** Uncertainty for core parameters derived from sampling (e.g., Water Quality Modifier $M_{q,y}$, Usage Rate $U_{p,y}$, Proportion boiling clean water $X_{cleanboil,y}$) is managed by mandatory statistical adjustments if the required precision targets (90/10 rule) are not met (Section 7.4.1 |). This involves using the Lower Bound of the one-sided 90% CI for positive compliance parameters ($M_{q,y}$ and $U_{p,y}$) and the Upper Bound of the one-sided 90% CI for negative compliance parameters ($X_{cleanboil,y}$).

13.2 | Sources of Uncertainty and Mitigation

13.2.1 | Key uncertainty sources and their mandated mitigation measures are summarized in the following table.

Table 11. Key uncertainty sources and mitigation measures

Source of Uncertainty	Parameter(s) Affected	Mitigation Measure(s)
Water Quality Testing Uncertainty Variability in microbial testing results, risk of sample contamination during collection/transport, and precision of field testing kits.	$M_{q,y}$ (Water Quality Modifier)	**Mandatory Statistical Conservativeness and QA/QC:** 1. Strict QA/QC procedures, including validation of field kits against accredited labs (Section 14.4 |). 2. Robust sampling requirements 3. Mandatory application of statistical conservativeness (Lower Bound) if 90/10 precision is not met (Section 7.4.1 |). PoU testing internalises recontamination
Behavioral Uncertainty (Usage and Adoption) Potential overestimation of usage due to survey bias or recall error, and uncertainty in determining drop-off rates (HWT/IWT).	$U_{P,y}$ (Usage Rate) $X_{cleanboil,y}$ (Continued Boiling)	**Mandatory Statistical Conservativeness and QA/QC:** 1. Adherence to rigorous usage monitoring guidelines (Annex - 1|). 2. Mandatory cohort sampling (HWT/IWT) to capture adoption curves over time (Section 14.5 |). 3. Application of statistical conservatism (Lower/Upper Bounds) if 90/10 precision is not met.

Measurement Uncertainty (CWT/CWS Flow) Accuracy of flow meters, sensors, or alternative methods (e.g., stroke tests) in determining the volume of water supplied.	$Q_{m,y}$ (Monitored Quantity)	QA/QC and Conservativeness: 1. Rigorous QA/QC, including equipment calibration or standardization of alternative methods (Section 14.5 |) 2. The baseline calculation uses the lower value between monitored quantity ($Q_{m,y}$) and population consumption capacity ($Q_{pop,y}$), ensuring conservativeness (Eq. 4).
Baseline emission-factor parameters (fuel mix, efficiency, fNRB, EFs)	fNRB, NCV, EFs, Leakage	Conservative defaults and cross-checks
Behavioral Uncertainty (Post-Collection Contamination) Recontamination of water during transport/storage, impacting safety at PoU.	$M_{q,y}$ (Water Quality Modifier)	Mandatory requirement for testing at the Point of Use (PoU) internalizes this effect into the crediting calculation (Section 7.4.3 |). Mandatory hygiene campaigns (SDWS 24) mitigate this risk.

14| MONITORING METHODOLOGY

14.1 | Requirements

14.1.1 | The activity developer shall develop and implement a Monitoring Plan, included in the PDD/VPA-DD, detailing the procedures for data collection, management, and quality control.

14.1.2 | **Core Monitoring Activities and Frequency**:

a. **Water Quality Testing ($M_{q,y}$):** Conducted annually (PoU and PoC).

b. **Usage Survey ($U_{P,y}$, $X_{cleanboil,y}$):** Conducted annually (HWT/IWT).

c. **Operational Monitoring $DO_{p,y}$, $Q_{m,y}$):** Continuous or annual (CWT/CWS).

d. **Water Consumption Field Test (WCFT):** Conducted biennially (if Option 2 for QPW_p is selected).

e. **Hygiene Education Campaign:** Conducted annually.

f. **Sales/Distribution Records:** Continuous tracking.

g. **Leakage Assessment: Conducted biennially** (If Option 3 selected).

14.1.3 | **Activity Database:** The activity developer shall maintain an electronic database containing records for every activity technology type; commissioning/batch date; geographic location logged at the lowest legally

permissible administrative unit (waterpoint, village or ward), with precise household GPS optional; the corresponding baseline scenario; survey and test participation records; and (CWT/CWS) operation and maintenance logs.

14.2 | Data and parameters not monitored

14.2.1 | The following parameters are determined ex-ante and remain fixed for the duration of the crediting period, unless otherwise noted.

A. Related to Water Quality and Applicability

Parameter ID	**SDWS 1**
Data/parameter:	Accessibility of CWT/CWS (Number of household/institution per CWT/CWS)
Description	Demonstration that end-user premises are accessible to the activity water source (CWT/CWS) per criteria in Section 3.2.5 |.
Data unit:	GPS Coordinates (DMS, DMM, or DD formats); Distance (km); Time (minutes); Number of premises.
Purpose of data:	☒ Applicability
Value(s) applied:	To be determined at activity level
Source of data:	☐ Measured ☒ Other source Activity records; GPS data; Satellite imaging; Surveys.
Choice of data or measurement methods and procedures:	Recorded ex-ante for each CWT/CWS installation at the start of the crediting period (or before first issuance for respective CWT/CWS units in progressive installations). **Default Criteria (1km or 30 mins):** 1. Record GPS coordinates for each CWT/CWS location. 2. Identify eligible premises within the 1 km radius or demonstrate 30-minute round trip time. 3. Exclude end-users beyond insurmountable barriers (e.g., river without bridge). **Context-Specific Criteria (Exception)** (Section 3.2.5 |3b)**:** Where the default criteria are not met, provide: 1. evidence of consistency with national/regional water supply policies, and 2. rigorous demonstration (surveys/GPS data) that the population utilizes the source as their primary drinking water source.
Treatment of uncertainty	The VVB shall verify the source location and the location/number of premises using publicly available information, satellite imagery, and/or GPS devices and shall validate the context specific justification.

Comments:	Applies only for CWT and CWS where water is collected at the PoC. All end-users included in baseline or monitoring surveys shall lie within the defined accessible boundary.

Parameter ID	**SDWS 2**
Data/parameter:	Activity technology description and performance (HWT/IWT/ Rehabilitated CWT/CWS)
Description	Detailed description of the planned activity technology and evidence of performance compliance (Section 3.2.1 |).
Data unit:	N/A
Purpose of data:	☒ Applicability
Value(s) applied:	To be determined at activity level.
Source of data:	☐ Measured ☒ Other source Manufacturer specifications; third-party certification; laboratory testing reports; official notifications.
Choice of data or measurement methods and procedures:	**HWT and IWT description:** Manufacturer name, product name, technology type. **HWT and IWT performance:** Evidence of compliance with national standards OR WHO International Scheme (2-star or 3-star). Evidenced by on laboratory testing reports or official notifications. **Rehabilitated CWT/CWS (Applicability Check)**: 1. Evidence of non-operational time (≥3 months) prior to rehabilitation (e.g., letter from local representative/ government). 2. Evidence of no existing maintenance or repair plan (e.g., letter from local representative/ government). 3. Original installation date/month (approximate month/year) 4. Details of rehabilitation activity (parts replaced, date, personnel).
Treatment of uncertainty	Professional opinion or expert opinion is not accepted. Testing should be representative of the site's operation conditions (including feedwater).
Comments:	Any information unavailable at validation requires a FAR; The VVB shall verify the information at the first verification (or first verification for the technology of progressive installation).

Parameter ID	**SDWS 3**
Data/parameter:	Activity technology performance level (CWT/CWS)

Description	Demonstration that water directly supplied by the CWT/CWS at the Point of Collection (PoC) complies with quality standards (Section 3.2.1 |).
Data unit:	CFU/100ml; mg/L or µg/L.
Purpose of data:	☒ Applicability
Value(s) applied:	To be determined at activity level.
Source of data:	☒ Measured ☐ Other source Water quality test report (Laboratory or validated Field Test).
Choice of data or measurement methods and procedures:	Testing shall demonstrate compliance with: 1. **Microbial quality:** National standards or WHO guideline values for microbial quality of drinking water, or in their absence (Table 7.10, WHO, 2017) 2. **Chemical/Physical quality:** National standards or international guidelines (e.g., Arsenic <10 µg/L, Fluoride <1.5 mg/L). Tested once at the start of the crediting period and at renewal of crediting period and retested following an event that could lead to contamination (e.g., earthquake, flooding, industrial accident) and at (Section 17|).
Treatment of uncertainty	Testing shall adhere to the QA/QC procedures defined in Section 14.4.3 | (Laboratory accreditation or Field Testing Kit validation).
Comments:	Applies to CWT and CWS.

Parameter ID	**SDWS 4**
Data/parameter:	Regulatory framework for safe water supply
Description	List and summary of national, sub-national, and local regulations or guidance for SDW supply, operation, maintenance, and tariffs, with description of activity compliance.
Data unit:	N/A
Purpose of data:	☒ Applicability
Value(s) applied:	N/A
Source of data:	☐ Measured ☒ Other source National, sub-national, and local authorities; Official regulatory documents.
Choice of data or measurement methods and procedures:	Assess at the start of the crediting period; update at renewal (Section 17|).
Treatment of uncertainty	N/A

Comments:	The activity shall not undermine or conflict with the regulatory framework. Where regulations establish caps on parameters (e.g., users per borehole), this shall be accounted for in calculations.

Parameter ID	**SDWS 5**
Data/parameter:	Water sources in the activity boundary
Description	Identification of water sources in the activity boundary used for drinking water, classified as improved and unimproved (See Annex -4|).
Data unit:	N/A
Purpose of data:	☒ Baseline Scenario
Value(s) applied:	To be determined at activity level.
Source of data:	☐ Measured ☒ Other source Baseline study; credible published literature; studies by academia/NGOs/multilateral institutions; official government statistics.
Choice of data or measurement methods and procedures:	Undertake at the start of each crediting period and when the activity boundary is revised/expanded. The source applied shall not be more than 3 years old.
Treatment of uncertainty	N/A
Comments:	Applies to all activity technology types.

B. Related to Emission Reductions

Parameter ID	**SDWS 6**
Data/parameter:	Baseline stove technologies used in the activity boundary
Description	Proportion of stove types used in premises in activity area, determined per premises type where applicable.
Data unit:	Percentage (%)
Purpose of data:	☒ Baseline emissions
Value(s) applied:	To be determined at activity level.
Source of data:	☐ Measured ☒ Other source Baseline survey; Credible published literature; Studies by academia/NGOs; Official statistics. Source applied shall not be more than 3 years old.
Choice of data or measurement	Undertake at the start of each crediting period; When an activity-specific baseline survey is conducted, follow Section 14.5 |.

methods and procedures:	Classify at least: Three-stone fire/conventional (no grate/chimney); other conventional biomass; improved cookstoves; fossil fuel systems.
Treatment of uncertainty	N/A
Comments:	Applies to all activity technology types. If implemented in different locations, define proportions per location.

Parameter ID	**SDWS 7**
Data/parameter:	Expected technical life of activity technology
Description	The expected technical life of an individual activity technology (including device life and replaceable filter life, if applicable).
Data unit:	Treatment volume, operational hours, or time period (e.g., years).
Purpose of data:	☒ Applicability
Value(s) applied:	To be determined at activity level.
Source of data:	☐ Measured ☒ Other source manufacturer specifications; third-party certification; commercial/installer guarantee (CWS/CWT); robust field study if others unavailable.
Choice of data or measurement methods and procedures:	The technical life shall be defined in the PDD. Professional opinion or expert opinion is not accepted. **Rehabilitated technologies:** Guarantee from the qualified entity undertaking the rehabilitation.
Treatment of uncertainty	N/A
Comments:	If technical life is shorter than the crediting period, measures for replacement/retrofit shall be described. Emission reduction claims are limited to the technical life unless replacement/retrofit occurs.

Parameter ID	**SDWS 8**
Data/parameter:	x_f
Description	Proportion of each different boiling fuel f used in the baseline by end-users in the activity boundary. Determined per premises type where applicable.
Data unit:	Percentage (%)
Purpose of data:	☒ Baseline emissions
Value(s) applied:	To be determined at activity level.
Source of data:	☐ Measured ☒ Other source

	Baseline survey; Credible published literature; Studies by academia/NGOs; Official statistics. Source applied shall not be more than 3 years old.
Choice of data or measurement methods and procedures:	Undertake assessment at the start of each crediting period. If a multifuel premise, calculate the proportion as a weighted average on an energy basis.
Treatment of uncertainty	The percentages applied shall be cross-checked against at least one other source. Cross-check sources may be up to 5 years old, or older if conservative (e.g., showing a more carbon-intensive mix in the past).
Comments:	Applies to all activity technology types.

Parameter ID	**SDWS 9**
Data/parameter:	$EF_{b,f,CO2}$
Description	CO_2 emission factor arising from use of baseline fuels f.
Data unit:	tCO_2/TJ
Purpose of data:	☒ Baseline emissions ☐ Activity emissions

Value(s) applied:	For wood and charcoal, the following defaults derived from the IPCC shall be applied:
	
	• Wood: 112 tCO_2/TJ
	• Charcoal:
	  ○ Default: 112 tCO_2/TJ (combustion only)
	  ○ WCCF 6:1 – 355.36 tCO_2/TJ (includes charcoal production emissions)
	  ○ WCCF 4:1 – 236.91 tCO_2/TJ (includes charcoal production emissions).
	• Fossil Fuels: IPCC defaults.

Source of data:	☐ Measured ☒ Other source IPCC defaults.
Choice of data or measurement methods and procedures:	Apply defaults derived from the latest applicable IPCC guidelines and the mandatory WCCF ratios (6:1 for SSA/LDCs; 4:1 for other regions).
Treatment of uncertainty	N/A
Comments:	N/A

Parameter ID	**SDWS 10**
Data/parameter:	$EF_{b,f,non-CO2}$
Description	Non-CO_2 (CH_4 and N_2O) Emission factor from use of baseline fuels f weighted by the applicable GWPs (biomass or charcoal).
Data unit:	tCO_2/TJ
Purpose of data:	☒ Baseline emissions ☐ Activity emissions
Value(s) applied:	• Wood: 9.46 tCO_2e/TJ (AR5 GWP) • Charcoal: • Default: 5.87 tCO_2/TJ (combustion only • WCCF 6:1 – 89.68 tCO_2/TJ (includes charcoal production emissions) WCCF 4:1 – 61.74 tCO_2/TJ (includes charcoal production emissions) Fossil Fuels: IPCC defaults.
Source of data:	☐ Measured ☒ Other source IPCC defaults
Choice of data or measurement methods and procedures:	Apply defaults derived from the latest applicable IPCC guidelines and applicable GWP values approved by GS4GG (AR5).
Treatment of uncertainty	N/A
Comments:	N/A

Parameter ID	**SDWS 11**
Data/parameter:	η_{wb}
Description	Weighted average efficiency of the baseline water boiling devices.
Data unit:	Percentage (%)
Purpose of data:	☒ Baseline emissions ☐ Activity emissions Baseline emissions (Eq. 2)
Value(s) applied:	To be determined at activity level.
Source of data:	☐ Measured ☒ Other source Methodology defaults or Water Boiling Test (WBT).
Choice of data or measurement methods and procedures:	Weighted average using proportions from SDWS 6 and the following efficiencies: **Defaults:** 1. Three-stone fire/conventional (no grate/chimney): 15%. 2. Other conventional woody biomass systems: 25%

	3. Improved cookstoves: Manufacturer specification or default 30%. 4. Fossil fuel system: Manufacturer specification or WBT. **Alternative:** Standard WBTs may be undertaken using representative sampling (Section 14.5 |) if significant differences from defaults are expected. **Adjustment for ICS Overlap:** Where the SDWS activity overlaps with a registered Improved Cookstove (ICS) activity the efficiency value (η_{wb}) applied for the overlapping population shall be the **efficiency of the improved cookstove** (or weighted average), not the traditional stove efficiency.
Treatment of uncertainty	N/A
Comments:	N/A

Parameter ID	**SDWS 12**
Data/parameter:	C_b
Description	Proportion of activity end-users who in the baseline were already using safe water (from an improved source or treatment method other than boiling).
Data unit:	Percentage (%)
Purpose of data:	☒ Baseline emissions ☒ Activity emissions
Value(s) applied:	To be determined at activity level.
Source of data:	☐ Measured ☒ Other source Baseline survey; Credible published literature; Studies by academia/NGOs; Official statistics. Source applied shall not be more than 3 years old.
Choice of data or measurement methods and procedures:	At the start of each crediting period. Users with access to a safe water source may not be credited unless demonstrated that the baseline source fails SDW criteria (via water quality tests over 6 months or credible literature ≤3 years old).
Treatment of uncertainty	Cross-checked against at least one other source (≤5 years old, or older if conservative). Shall be consistent with SDWS 5.
Comments:	N/A.

Parameter ID	**SDWS 13**
Data/parameter:	q_i
Description	Capacity of the household or institutional water treatment technology (HWT/IWT).

Data unit:	Litres per hour (L/h)
Purpose of data:	☒ Baseline emissions ☐ Activity emissions
Value(s) applied:	To be determined at activity level.
Source of data:	☐ Measured ☒ Other source Manufacturer specifications; Design specifications; Third-party certification; Commercial guarantee.
Choice of data or measurement methods and procedures:	Professional or expert opinion is not accepted. Alternative approaches may be proposed (e.g., Chlorine dosage per liter). If capacity is expressed in other terms (e.g., L/day), convert to L/h accounting for $t_{p,y}$ (SDWS 35).
Treatment of uncertainty	N/A
Comments:	Applies for HWT and IWT.

Parameter ID	**SDWS 14**
Data/parameter:	NCV_f
Description	Net calorific value of fossil fuel f.
Data unit:	TJ/fuel units (mass or volume)
Purpose of data:	☒ Activity emissions
Value(s) applied:	IPCC defaults or activity-specific values.
Source of data:	☐ Measured ☒ Other source IPCC defaults; fuel supplier invoice; national defaults.
Choice of data or measurement methods and procedures:	N/A
Treatment of uncertainty	If a source other than IPCC defaults is applied, cross-check against the IPCC default range. If outside the range, the difference shall be justified.
Comments:	Applies to the calculation of activity emissions (fossil fuel backup).

Parameter ID	**SDWS 15**
Data/parameter:	EF_f
Description	CO_2 Emission factor of fossil fuel f.
Data unit:	tCO_2/TJ
Purpose of data:	☒ Activity emissions ☐ SDG baseline

Value(s) applied:	IPCC defaults or activity-specific values.
Source of data:	☒ Measured ☒ Other source IPCC defaults; Fuel supplier invoice; National defaults.
Choice of data or measurement methods and procedures:	N/A
Treatment of uncertainty	If a source other than IPCC defaults is applied, cross-check against the IPCC default. If outside +/-2%, the difference shall be justified.
Comments:	Applies to activity emissions (fossil fuel backup).

Parameter ID	**SDWS 16**
Data/parameter:	EF_{ec}
Description:	Emission factor associated with electricity use.
Data unit:	tCO_2/kWh
Purpose of data:	☒ Activity emissions
Value(s) applied:	To be determined at activity level.
Source of data:	Methodology defaults or the latest version of A6.4-AMT-007
Choice of data or measurement methods and procedures:	Any of the following may be applied: 1. Default 0.001 tCO_2/kWh (if annual consumption > 250 kWh/year/unit). 2. Default 0.0008 tCO_2/kWh (if annual consumption ≤ 250 kWh/year/unit). 3. Determined by applying the latest version of A6.4-AMT-007
Treatment of uncertainty	N/A.
Comments:	Applies to the calculation of activity emissions (electricity use).

Parameter ID	**SDWS 17**
Data/parameter:	TDL_{ec}
Description:	Transmission and distribution losses associated with electricity use.
Data unit:	Percentage (%)
Purpose of data:	☒ Activity emissions
Value(s) applied:	A6.4-AMT-007 default (Parameter table 10).
Source of data:	Methodology default or official literature.
Choice of data or measurement	In order of preference:

methods and procedures:	1. Data from national/regional/local authorities (≤3 years old) 2. Applicable A6.4-AMT-007 default
Treatment of uncertainty	N/A.
Comments:	Applies to the calculation of activity emissions (electricity use).

C. Related to Double Counting

Parameter ID	**SDWS 18**
Data/parameter:	Avoidance of double counting or double claiming among activity participants
Description:	Evidence of avoidance of double counting or double claiming with other parties directly involved with the activity or programme (e.g., manufacturers, retailers).
Data unit:	N/A
Purpose of data:	☒ Applicability
Value(s) applied:	N/A.
Source of data:	Activity documentation; Contracts.
Choice of data or measurement methods and procedures:	Written assertions from the activity developer confirming ownership rights and the intention to sell emission reductions. These assertions shall be directed to or signed with all applicable parties, including: 1. All other activity participants 2. Activity technology producers; and 3. Retailers of the activity technology.
Treatment of uncertainty	N/A.
Comments:	The written assertions shall be provided and verified before the first verification.

Parameter ID	**SDWS 19**
Data/parameter:	Avoidance of double counting or double claiming with other mitigation actions
Description:	Review and analysis of mitigation actions in other national or international voluntary or UNFCCC/compliance mechanisms.
Data unit:	N/A
Purpose of data:	☒ Applicability
Value(s) applied:	N/A.
Source of data:	Public information from GS, other voluntary standards (e.g., Verra), and UNFCCC/A6.4 databases.

Choice of data or measurement methods and procedures:	Identify similar mitigation actions and technology operating in overlapping boundaries. Undertake due diligence to ensure the activity does not include devices already included in other mitigation actions and does not displace technology of other actions. The developer shall conduct a systematic overlap assessment. The VVB shall validate this assessment at design review and verify it at VPA inclusion or design change reviews.
Treatment of uncertainty	If overlap is identified, the developer shall document practices to ensure quantification only from activity devices, avoidance of displacement, and monitoring/discounting if displacement occurs.
Comments:	The assessment shall specifically check for Institutional Water Treatment (IWT) activities (e.g., WASH in Schools) operating within the same activity boundary. • **If Overlap is Identified:** The "Adjustment for Institutional Overlap" defined in Section 7.3.11 | (Table 9) shall be applied to the baseline calculation for the school-aged cohort (5-18 years) in the HWT activity.

Parameter ID	**SDWS 20**
Data/parameter:	End-User Notification of Non-Claiming
Description:	Evidence that end-users have been informed and notified that they cannot claim emission reductions from the activity.
Data unit:	N/A
Purpose of data:	☒ Applicability
Value(s) applied:	N/A.
Source of data:	Transaction paperwork; Distribution records; Contracts with end-users.
Choice of data or measurement methods and procedures:	Clear written assertions in the transaction paperwork or contracts provided to the end-users.
Treatment of uncertainty	N/A.
Comments:	The evidence shall be provided and verified before the first verification.

d. Related to leakage — embodied emissions

Parameter ID	**SDWS 21**
Data/parameter:	$EF_{embodied,default}$

Description:	kg CO_2e per unit (HWT/IWT) or per system (CWT/CWS)
Data unit:	Default cradle-to-gate embodied-emissions deduction applied once per new activity-technology unit or system (Table 9, Section 9.2 |).
Purpose of data:	Leakage (embodied)
Value(s) applied:	Per Table 9 (section 9.2): basic filters 8.0; advanced treatment (membrane/UV) 12.0; biosand–concrete 65; biosand–plastic 25 (per unit); rehabilitation 1,000; CWT kiosk 2,000; new borehole / mechanised 4,500 (per system).
Source of data:	Methodology default (Table 9). Provisional pending the SI section 3 cradle-to-gate LCA derivation.
Choice of data or measurement methods and procedures:	Apply the Table 9 value for the matching technology category, once per new unit/system disseminated within the first crediting period; combined with $N_{disseminated,y}$ (SDWS 41) in Eq 18.
Treatment of uncertainty	Conservative standardised default; per-unit/per-system values provisional pending SI section 3 (the 4,500 kg borehole figure is held for source verification).
Comments:	Amortisation timing: as written (Eq 18) the full deduction falls once, in the year of dissemination (Option A, upfront) — recommended on conservativeness grounds; surfaced for decision at Section 9.2.

14.3 | Data and parameters monitored

14.3.1 | The following parameters shall be monitored during the crediting period.

A. Related to water quality, SDG and hygiene

Parameter ID	**SDWS 22**
Data/parameter:	$M_{q,y}$
Description:	Modifier for the water quality in year y - fraction of samples that pass microbial quality standard requirements.
Data unit:	Fraction (%)
Purpose of data:	☒ Baseline emissions
Measurement and updating frequency	Annually. The first round of testing shall be conducted at least six months after the start date.
Measurement methods and procedures:	Water quality testing at the Point of Use (PoU) on a representative sample of end-users (Section 2|). **Standard:** Compliance with national standards OR (if absent) <10 CFU E.coli/100 ml.

	Sampling Requirements (Section 14.5 |): Sampling shall satisfy the 90/10 rule. Minimum sample size of 50. **Statistical Adjustment** (Section 7.4.1 |): If 90/10 rule is NOT met, the Lower Bound of the 90% CI shall be used.	
Entity/person responsible for the measurement:	Activity Developer or contracted entity (e.g., accredited laboratory, trained field staff).	
Measuring instrument(s):	Type of instrument	Accredited laboratory equipment OR Validated Field-Testing Kits (CFU or MPN methods) OR Validated Sensors (digital MRV) (Section 14.4.3 |).
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	Testing shall adhere to the rigorous QA/QC procedures defined in Section 14.4.3 | (Laboratory accreditation or Field-Testing Kit/Sensor validation, including parallel testing). Strict protocols for sterile sample collection, transport, and incubation shall be followed. CWT/CWS activities shall also conduct concurrent PoC testing (Section 14.4.2 |).	
Treatment of uncertainty	**Statistical Adjustment** (Section 7.4.1 |): If 90/10 precision is NOT met, the Lower Bound of the 90% CI shall be used.	
Comments:	**Proportional Crediting:** Emission reductions are proportional to $M_{q,y}$.**Corrective Action:** If the failure rate exceeds the thresholds (Year 1: 20%; Year 2: 15%; Year 3+: 10%), a mandatory corrective action plan and remediation explanation are required (Section 7.4.3 |).	

Parameter ID	**SDWS 23**
Data/parameter:	SDG 6 claims
Description:	Monitoring parameter(s) to demonstrate and confirm the activity's contributions to SDGs, particularly SDG 6.1.1.
Data unit:	N/A (To be specified by the developer)
Purpose of data:	☒ SDG Claims To be specified by the activity developer (e.g., surveys, activity records, analysis of SDWS 22 data).
Measurement and updating frequency	Annually.

Measurement methods and procedures:	The developer shall transparently report on: 1. **Level of Service:** Classification of service levels achieved (Limited, Basic, or Safely Managed) according to WHO/JMP definitions. Eligibility: Claims are permitted for achieving "Basic" or "Safely Managed" service levels. 2. **Activity contributions:** Monitoring indicators for Accessibility, Availability, and/or Quality.	
Entity/person responsible for the measurement:	CME/activity developer	
Measuring instrument(s):	Type of instrument	Survey instruments; Analysis of water quality data.
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	To be specified by the activity developer and validated by the VVB. Ensure alignment with JMP definitions and methodologies.	
Treatment of uncertainty	To be specified by the activity developer. If sampling is used, adherence to Section 14.5 | is recommended.	
Comments:	Optional.	

Parameter ID	**SDWS 24**
Data/parameter:	Water hygiene education campaigns
Description:	Hygiene campaigns carried out among activity safe water end-users.
Data unit:	N/A
Purpose of data:	☒ Safeguard ☐ Activity emissions Report of annual hygiene campaigns results; Impact assessment surveys.
Measurement and updating frequency	Annually.
Measurement methods and procedures:	The developer shall report activities conducted each year in a detailed report (e.g., dates, topics, participants). **Impact Assessment:** The impacts of the campaign shall be assessed using the WHO/UNICEF JMP Core questions for drinking water and hygiene (in-person or remote survey).

	Any major outbreaks of water-related disease shall be reported, and a remediation strategy implemented.	
Entity/person responsible for the measurement:	CME/activity developer/Third party	
Measuring instrument(s):	Type of instrument	Campaign activity logs; Standardized surveys (JMP Core questions).
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	The fraction of households fulfilling "safely managed" or "basic" hygiene requirements is expected to increase over time. QA/QC procedures for surveys (e.g., enumerator training, back-checks) shall be implemented.	
Treatment of uncertainty	For sampling of impact assessment surveys, follow Section 14.5 |.	
Comments:	Mandatory for all activities.	

B. Related to Emission Reductions

Parameter ID	**SDWS 25**
Data/parameter:	$f_{NRB,f,y}$
Description:	Fraction of non-renewability status of woody biomass fuel during year y (if baseline fuel is biomass/charcoal).
Data unit:	Percentage (%).
Purpose of data:	☒ Baseline emissions Standardized Tools (Determined using the latest version of approved standardized tools i.e., MoFuSS, or approved A6.4 fNRB tool).
Measurement and updating frequency	One of three options, fixed at Design Certification: 1. Determined ex-ante and fixed for the crediting period. 2. Updated biennially. 3. Updated at each monitoring and verification.
Measurement methods and procedures:	Determined by applying the selected standardized tool according to its specific procedures.
Entity/person responsible for	Activity Developer or designated expert/consultant.

the measurement:		
Measuring instrument(s):	Type of instrument	N/A (Data analysis based on standardized tool inputs).
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	Adherence to the requirements and procedures of the selected standardized tool.	
Treatment of uncertainty	Uncertainty is managed through the conservativeness built into the approved standardized tools. On reassessment, the update is constrained by the Section 12.2.2 | reversal rules: the cap on upward adjustment (the updated value shall not exceed the previous crediting period's) and the biomass-availability check.	
Comments:	Applies to all baseline biomass consumption, including suppressed demand.	

Parameter ID	**SDWS 26**	
Data/parameter:	$X_{cleanboil,y}$	
Description:	Proportion of activity end-users that boil safe (treated or from safe supply) water after installation of activity technology in year y.	
Data unit:	Percentage (%)	
Purpose of data:	☒ Baseline emissions Activity survey (In-person or remote).	
Measurement and updating frequency	Annually.	
Measurement methods and procedures:	Determined by activity/usage survey (in-person or remote), integrated with the Usage Survey (Annex 1), as the proportion of end-users still boiling the safe water. Sampling (Section 14.5 |): 90/10 rule; where not met, use the upper bound of the one-sided 90% CI (Section 7.4.2 |) — $X_{cleanboil}$ is a deduction parameter, so the conservative bound is the upper one.	
Entity/person responsible for the measurement:	CME/activity developer/Third party	
Measuring instrument(s):	Type of instrument	Survey instruments, CSMs (if applicable)

	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	Adherence to recognised survey protocols. Training of enumerators and supervision. Data validation and cross-checks.	
Treatment of uncertainty	Managed through robust sampling design (90/10 precision required for the usage rate); where not met, the upper bound of the one-sided 90% CI (Section 7.4.2 |).	
Comments:	NA	

Parameter ID	**SDWS 27**	
Data/parameter:	Presence of Stove Stacking	
Description:	Data on the presence and usage practices of baseline and other non-activity technology by activity technology end users.	
Data unit:	Fraction (%)	
Purpose of data:	☒ Activity Emissions ☒ Leakage Emissions	
Measurement and updating frequency	Annual (integrated with Usage Survey)	
Measurement methods and procedures:	Determined via standardized survey. For HWT/IWT, this shall be integrated into the Usage Survey (Annex -1|, Topic 6).	
Entity/person responsible for the measurement:	CME/activity developer/or trained enumerators.	
Measuring instrument(s):	Type of instrument	Standardized survey questionnaire (paper or electronic).
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	Robust QA/QC procedures for survey execution (enumerator training, bias minimization, back-checks) as detailed in Annex -1| (A.1.2).	
Treatment of uncertainty	Sampling shall satisfy the 90/10 rule (Section 14.5 |). If not met, the Upper Bound of the one-sided 90% CI shall be used (Section	

	7.4.1 |); where not met, use the upper bound of the one-sided 90% CI (Section 7.4.2 |).
Comments:	N/A

Parameter ID	**SDWS 28**	
Data/parameter:	$Q_{m,y}$	
Description:	Monitored quantity of safe water provided by the CWS/CWT activity in year y.	
Data unit:	Liters/year (L/yr)	
Purpose of data:	☒ Baseline Emissions Direct measurement at the central location of the CWS or CWT	
Measurement and updating frequency	Continuously (Options 1 & 2) or Periodically (Option 3/Sampling). Aggregated Annually. For Option 3, the developer shall validate the proxy against a direct measurement (Option 1 or 2) quarterly. The sample shall follow General requirements for sampling.	
Measurement methods and procedures:	Measured using one of the following options: **Option 1: Flow Meter:** Direct measurement of water volume. Mandatory Exclusion of Non-Eligible Uses: The flow meter shall capture only water dispensed for human consumption. Outlets for non-eligible uses (e.g., cattle troughs, irrigation) shall be located upstream of the meter or sub-metered and deducted. **Option 2: Operation Sensor:** Measurement of operation time/strokes; volume calculated based on capacity. **Option 3: Alternative Methods (Handpumps only):** If Options 1/2 are infeasible/inappropriate/prohibited, recognized methods/proxies (e.g., standardised stroke tests) are permitted. Requires robust justification and VVB validation. Measurement may be on a sampling basis (Section 14.5 |).	
Entity/person responsible for the measurement:	CME/activity developer/Third party	
Measuring instrument(s):	Type of instrument	Calibrated flow meters; Operation sensors (e.g., stroke counters); Standardized vessels and timers (Option 3).
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A

QA/QC procedures:	Adherence to QA/QC requirements in Section 14.4.4 |. Includes regular calibration/maintenance (Options 1/2) or rigorous standardization and verification (Option 3). If there are multiple water points, either install meters on all or sample a representative subset. For option 3, a minimum coefficient of determination $R^2 \geq 0.80$ and a slope within ±10% of the expected yield shall be achieved. Proxies shall be revalidated annually or when material changes occur (pump replacement, head change, dose change, tariff/container size changes).
Treatment of uncertainty	Managed via equipment calibration/standardization. The baseline calculation conservatively caps $Q_{m,y}$ by $Q_{pop,y}$ (Eq. 4).
Comments:	Applies to CWT and CWS activities.

Parameter ID	**SDWS 29**	
Data/parameter:	$Q_{PW,p}$	
Description:	Volume of drinking water per person per day for premises type p.	
Data unit:	Liters/person/day (L/p/d)	
Purpose of data:	☒ Baseline emissions Default or monitored value, subject to caps. Methodology Defaults or Water Consumption Field Test (WCFT).	
Measurement and updating frequency	Every two years (if Option 2 is selected). Fixed (if Option 1 is selected).	
Measurement methods and procedures:	**Option 1: Apply Default Values (Tiered):** Refer to Table 9; Where Option 1 defaults are used to claim suppressed demand, a mandatory 5% deduction applies. **Option 2: Water Consumption Field Test (WCFT):** Determine activity-specific value following the mandatory guidelines in Annex -2|. **Cap:** In all cases, the value is capped as per table 9.	
Entity/person responsible for the measurement:	Activity Developer or trained enumerators (if Option 2 selected).	
Measuring instrument(s):	Type of instrument	(Option 2) Calibrated graduated containers, timers, standardised WCFT logs.
	Accuracy class	N/A

	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	(Option 2) per Annex -2| standardised training, equipment calibration, and rigorous differentiation of water uses.	
Treatment of uncertainty	(Option 2) Sampling shall satisfy the 90/10 rule (Section 14.5 |). where not met, the lower Bound of the one-sided 90% CI shall be used (Annex -2|, A.2.4).	
Comments:	Applies in all cases. For HWT activities, check for overlap with IWT activities and apply deductions if necessary.	

Parameter ID	**SDWS 30**	
Data/parameter:	$HN_{p,y}$	
Description:	Number of individuals per premises type p in the activity boundary in year y.	
Data unit:	Number	
Purpose of data:	☒ Baseline emissions Activity survey; Official statistics; Credible published literature; Studies by academia/NGOs.	
Measurement and updating frequency	Annually.	
Measurement methods and procedures:	Determine the average number of individuals per premises type. Source applied shall not be more than 3 years old. When a activity survey is used, follow Section 14.5 |. Data should be disaggregated by age group if tiered QPW_p defaults are used.	
Entity/person responsible for the measurement:	Activity Developer or trained enumerators.	
Measuring instrument(s):	Type of instrument	Standardised survey questionnaire; Analysis of secondary data.
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	The value applied shall be cross-checked against at least one other independent source (≤5 years old, or older if conservative). If discrepancies exist, the most relevant source shall be chosen,	

	prioritizing relevance over conservativeness if justified (See Section 14.5.6).
Treatment of uncertainty	If determined via survey, follow sampling requirements in Section 14.5 |.
Comments:	N/A.

Parameter ID	**SDWS 31**	
Data/parameter:	$HH_{p,y}$	
Description:	Number of premises type p served by the activity in year y (CWT/CWS).	
Data unit:	Number	
Purpose of data:	☒ Baseline emissions; Survey (In-person or remote).	
Measurement and updating frequency	Annually.	
Measurement methods and procedures:	Survey premises within the accessible boundary (SDWS 1) to check the frequency of activity water source use during the year. Premises that report at least every-two-days use may be counted.	
Entity/person responsible for the measurement:	Activity Developer or trained enumerators.	
Measuring instrument(s):	Type of instrument	Standardised survey questionnaire.
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	Robust survey QA/QC procedures for survey execution (enumerator training, back-checks).	
Treatment of uncertainty	For sampling, follow Section 14.5 |.	
Comments:	Applies to CWT and CWS activities.	

Parameter ID	**SDWS 32**
Data/parameter:	$DO_{p,y}$
Description:	Days the activity technology is operational for end-users in premises p in year y (CWT/CWS/IWT).

Data unit:	Days	
Purpose of data:	☒ Baseline emissions Operation sensor or Log of operation and maintenance.	
Measurement and updating frequency	Annually.	
Measurement methods and procedures:	In order of preference: 1. Measure directly using operation sensor. 2. Demonstrate from log of operation and maintenance system (Section 3.2.6 |), detailing uptime and downtime.	
Entity/person responsible for the measurement:	Activity developer or trained enumerators or designated system operator/institutional representative.	
Measuring instrument(s):	Type of instrument	Operation sensors; Standardized operation and maintenance logs.
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	Regular verification of sensor data or auditing of logbooks. For institutions, days shall be limited by the number of operating days (e.g., school days), accounting for weekends/holidays.	
Treatment of uncertainty	Values higher than 347 days (95% of days) may only be applied when Option 1 (sensor) is used. Uncertainty is managed by this conservative cap when relying on manual logs.	
Comments:	Applies to CWT, CWS activities and IWT.	

Parameter ID	**SDWS 33**
Data/parameter:	$N_{p,y}$
Description:	Accumulated number of premises type p with at least one individual activity technology in year y (HWT/IWT).
Data unit:	Number
Purpose of data:	☒ Baseline emissions Sales or distribution records (Activity Database).
Measurement and updating frequency	Annually.

Measurement methods and procedures:	Based on continuous tracking of sales/distribution records. Units shall not be counted after the end of their technical life (SDWS 7), unless replacement or retrofit is verified (Section 3.2.6 |).	
Entity/person responsible for the measurement:	Developer (Data Management Team).	
Measuring instrument(s):	Type of instrument	Activity Database (Section 14.1.3 |).
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	Records shall include: Date of sale/distribution; Geographic area; Model/type; Quantity; Unique identifier, and traceable contact information/location for all end users. Data entry procedures shall include cross-checks for accuracy and completeness.	
Treatment of uncertainty	N/A (Census data).	
Comments:	Applies to HWT and IWT activities.	

Parameter ID	**SDWS 34**
Data/parameter:	$U_{p,y}$
Description:	Usage rate of the activity technology by premises type p during year y (HWT/IWT).
Data unit:	Percentage (%)
Purpose of data:	☒ Baseline emissions Usage Survey (Annex -1|).
Measurement and updating frequency	Annually.
Measurement methods and procedures:	Determined via Usage Survey following guidelines in Annex -1|. **Option 1: In-person survey.** $U_{p,y}$ = Fraction of users. **Option 2: Remote survey.** $U_{p,y}$ = Fraction of users * 0.75. Premises shall show at least once-in-two-days use to be counted as users. Sampling shall be stratified by technology age (cohorts) (Section 14.5.5 |)
Entity/person responsible for	Developer or trained enumerators.

the measurement:		
Measuring instrument(s):	Type of instrument	Standardised survey questionnaire (Annex -1|).
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	Robust QA/QC procedures (enumerator training, bias minimisation, back-checks) as detailed in Annex -1| (A.1.2). Where a WCFT (SDWS 29) is undertaken, this may be used to cross-check the usage percentage.	
Treatment of uncertainty	Sampling shall satisfy the 90/10 rule (Section 14.5 |). Where not met, the Lower Bound of the 90% CI shall be used (Section 7.4.1 |). Option 2 applies a mandatory discount factor (0.75) to account for lack of direct observation.	
Comments:	Applies to HWT and IWT activities.	

Parameter ID	**SDWS 35**	
Data/parameter:	$t_{p,y}$	
Description:	Usage time of the activity technology by premises type p in year y (HWT/IWT).	
Data unit:	Hours per day (h/day)	
Purpose of data:	☒ Baseline emissions; Usage Survey (Annex -1|).	
Measurement and updating frequency	Default 5 hours or monitored value.	
Measurement methods and procedures:	Option 1: Default of 5 hours. Option 2: Observational sample-based survey. Option 3: Interview survey (remote survey). For sampling (Options 2 & 3), follow Section 14.5 |.	
Entity/person responsible for the measurement:	Developer or trained enumerators (if Options 2 or 3 selected).	
Measuring instrument(s):	Type of instrument	(Options 2/3) Standardized survey questionnaire or observation logs.

	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	Standard survey QA/QC applies (Section 14.4.1 |).	
Treatment of uncertainty	Managed by conservative default (Option 1) or adherence to sampling requirements (Options 2 & 3).	
Comments:	Applies to HWT and IWT. Used to determine if device capacity limits consumption.	

Parameter ID	**SDWS 36**	
Data/parameter:	$DP_{p,y}$	
Description:	Average days the activity technology is present for end-users in the premises p in year y (HWT/IWT).	
Data unit:	Days	
Purpose of data:	☒ Baseline emissions	
Measurement and updating frequency	Sales or distribution records (Activity Database). Annually.	
Measurement methods and procedures:	Based on "Date of sale/distribution" and "Expected technical life" (SDWS 7) recorded in the Activity Database. Determine for each device how many days of the year it was in the premises and within its technical life. Calculate the average for all technologies by premises type p.	
Entity/person responsible for the measurement:	Developer (Data Management Team).	
Measuring instrument(s):	Type of instrument	Activity Database / MIS.
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	For institutions, days shall be limited by the number of operating days (e.g., school days). Database records shall be accurate and complete.	

Treatment of uncertainty	N/A (Calculated based on census data).
Comments:	Applies to HWT and IWT activities.

Parameter ID	**SDWS 37**	
Data/parameter:	$DN_{p,y}$	
Description:	Average number of individual activity technologies in each activity premises type p in year y (HWT/IWT).	
Data unit:	Number	
Purpose of data:	☒ Baseline emissions	
Measurement and updating frequency	Sales or distribution records (Activity Database). Annually.	
Measurement methods and procedures:	Based on "Quantity of activity technologies sold" and identifying information of buyer/recipient in the Activity Database. Calculate the average number of devices per premises type p.	
Entity/person responsible for the measurement:	Developer (Data Management Team).	
Measuring instrument(s):	Type of instrument	Activity database / MIS.
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	Database records shall be accurate and complete, correctly linking multiple devices to a single premise where applicable.	
Treatment of uncertainty	N/A (Calculated based on census data).	
Comments:	Applies to HWT and IWT activities.	

C. Related to activity emissions and leakage

Parameter ID	**SDWS 38**
Data/parameter:	$P_{p,f,y}$
Description:	Quantity of fossil fuel f consumed in the activity during year y.
Data unit:	Mass or volume units (e.g., Liters of diesel)
Purpose of data:	☒ Activity emissions

Measurement and updating frequency	Fuel purchase receipts or direct measurement (e.g., engine run-time logs). Annually.	
Measurement methods and procedures:	Aggregate total fuel consumption from purchase receipts OR calculate based on standardized engine fuel consumption rates multiplied by recorded engine run-time.	
Entity/person responsible for the measurement:	Developer or designated system operator/technician.	
Measuring instrument(s):	Type of instrument	Engine hour meters; Fuel gauges; Purchase records.
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	The developer shall also demonstrate (e.g., via run-time logs) that backup fossil-fuel engines are used for no more than 10% of total operating hours (Section 3.2.1 |). Receipts and logs shall be maintained and verifiable.	
Treatment of uncertainty	Managed by relying on verifiable records (receipts) or calibrated meters.	
Comments:	Applies if fossil fuel backup is used.	

Parameter ID	**SDWS 39**
Data/parameter:	$EC_{p,y}$
Description:	Quantity of electricity used by the activity during year y.
Data unit:	kWh
Purpose of data:	☒ Activity emissions
Measurement and updating frequency	Electricity bills or direct metering of the activity technology. Annually.
Measurement methods and procedures:	Aggregate electricity consumption from dedicated meters or electricity bills associated with the activity technology.
Entity/person responsible for the measurement:	Developer or designated system operator/technician.

Measuring instrument(s):	Type of instrument	Calibrated electricity meters.
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	Electricity meters should be maintained according to manufacturer or utility standards. Records (bills/meter logs) shall be maintained and verifiable.	
Treatment of uncertainty	Managed by relying on verifiable records (bills) or calibrated meters.	
Comments:	Applies if electricity is used.	

Parameter ID	**SDWS 40**	
Data/parameter:	$LE_{Market,y}$	
Description:	Assessment and quantification of Market and Behavioral Leakage.	
Data unit:	tCO_2e/yr or Percentage (%)	
Purpose of data:	☒ Leakage emissions Default 2% or monitored value. Ex-ante assessment; Leakage investigation surveys.	
Measurement and updating frequency	Every two years (If Option 2 is selected). Fixed (If Options 1 selected).	
Measurement methods and procedures:	Determined according to the option selected in Section 9.3 |. **Option 1 (Default):** Apply 2% deduction. **Option 2 (Detailed Assessment):** Conduct leakage investigation surveys to quantify leakage sources (e.g., compensation for lost heating, market fuel availability).	
Entity/person responsible for the measurement:	Developer or trained enumerators (if Option 2 selected).	
Measuring instrument(s):	Type of instrument	(Option 2) Standardized survey questionnaires.
	Accuracy class	N/A
	Calibration requirements	N/A

	Location	N/A
QA/QC procedures:	(Option 2) Robust QA/QC procedures for survey execution (Section 14.4.1 |).	
Treatment of uncertainty	For Option 2, surveys shall follow Section 14.5 | requirements for precision and conservatism. Options 1 and 2 use conservative assumptions/defaults.	
Comments:	N/A.	

D. Related to leakage — embodied emissions

Parameter ID	**SDWS 41**	
Data/parameter:	$N_{disseminated,y}$	
Description:	Number of new activity-technology units disseminated (or systems installed) in year y.	
Data unit:	Number	
Purpose of data:	☒ Leakage emission	
Measurement and updating frequency	Annually (continuous tracking).	
Measurement methods and procedures:	Count of new units/systems commissioned in year y, from the activity database — the annual increment to the accumulated count $N_{p,y}$(SDWS 33). Combined with $EF_{embodied,default}$in Eq 18.	
Entity/person responsible for the measurement:	Developer or trained enumerators (if Option 2 selected).	
Measuring instrument(s):	Type of instrument	Activity database (Section 14.1.3 |).
	Accuracy class	N/A
	Calibration requirements	N/A
	Location	N/A
QA/QC procedures:	As SDWS 33: dated, uniquely-identified records with cross-checks for accuracy and completeness.	
Treatment of uncertainty	Census data (no sampling).	
Comments:	Feeds Eq 18; one embodied deduction per new unit/system, in the year of dissemination.	

14.4 | QA/QC and Data Management

14.4.1 | The activity developer shall establish and implement robust QA/QC procedures for data collection, recording, storage, and analysis. This includes standardised training for field staff, equipment calibration, systematic data cross-checks, and supervisory back-checks.

14.4.2 | **CWT/CWS Dual Water Quality Testing:** For CWT and CWS activities, a dual testing approach is mandatory to ensure accountability and accuracy:

a | Point of Use (PoU) Testing determines the crediting factor ($M_{q,y}$, SDWS), as this reflects the actual safety of the water consumed (Section 7.4.3 |).

b | Point of Collection (PoC) Testing shall be conducted concurrently with PoU testing (Annually). If PoC failure triggers immediate corrective actions, irrespective of the PoU results.

14.4.3 | **Water Quality Testing QA/QC:** The following requirements apply to all water quality testing (PoC and PoU):

a | Accredited Laboratories: Laboratories used for testing shall be approved by local health authorities and/or have recognised quality accreditation (e.g., ISO/IEC 17025).

b | Field Testing Kits: Field testing kits (e.g., based on CFU or MPN methods) are eligible provided they meet the following requirements:

i. Approval: Kits shall be approved by a national agency or meet standards set by a recognised international organisation (e.g., US-EPA, WHO, a national regulator).

ii. Validation (Parallel Testing): Prior to application for activity monitoring, non-approved kits require documented parallel validation against an ISO (or equivalent) standard. The validation protocol and results shall be documented and verified by the VVB.

c | Sensors (Digital MRV): Validated sensor-based approaches for direct monitoring are permitted and encouraged if adherence to standardised validation and QA/QC protocols (e.g., regular calibration, data validation procedures) is demonstrated and validated by the VVB.

d | Free Residual Chlorine may serve as a complementary operational indicator for chlorine systems but does not replace the microbial determination of $M_{q,y}$

14.4.4 | **Flow Measurement QA/QC (SDWS):**

a | **Meters/Sensors (Method 1 & 2):** Shall be calibrated according to manufacturer specifications or national/international standards. Maintenance logs shall be maintained.

b | **Alternative Methods (Method 3):** Procedures (e.g., stroke test) shall be standardised based on recognised WASH sector protocols (e.g., RWSN, Skat Foundation). Enumerator training and periodic verification of the methodology's accuracy are required.

14.4.5 | **Management of Data Gaps (Continuous Monitoring):** For parameters monitored continuously (e.g., flow meters), data gaps due to failure shall be treated as follows:

a. **Gaps < 15 days:** Estimated by averaging the 15 days preceding and following the gap.

b. **Gaps > 15 days:** No emission reductions shall be claimed for the period of the gap (Volume = 0), unless robust alternative evidence (e.g., manual logs verified by audit) is provided.

14.5 | Sampling requirements

14.5.1 | **General Requirements:** All sampling efforts conducted for baseline determination and monitoring (e.g., Usage Surveys, Water Quality Testing, WCFT, WBTs) shall comply with the latest version of the CDM Standard: Sampling and surveys for CDM project activities and programme of activities (or the A6.4/PACM equivalent).

14.5.2 | **Precision Requirements:** The required statistical precision for key sampled parameters $M_{q,y}$, $U_{p,y}$, $X_{cleanboil,y}$, QPW_p (if WCFT used)) is the **90/10 rule** (90% confidence interval, 10% margin of error in relative units).

14.5.3 | **Minimum Sample Size:** A minimum sample size of 50 units/households is required for any WCFT campaign. A minimum sample size of 50 shall be selected for any given sample group or stratum. If the population size is less than 50, the entire population shall be surveyed (census).

14.5.4 | **Mandatory Conservativeness (Uncertainty Adjustment):** If the 90/10 precision target is not met, the application of statistical conservatism (Lower/Upper Bounds of the 90% CI) is mandatory.

14.5.5 | **Stratification (HWT/IWT):** For HWT/IWT activities (Method 2), sampling for Usage Surveys $U_{p,y}$, $X_{cleanboil,y}$ shall be stratified by the age of the technology (cohorts) to ensure the results are representative of the adoption and drop-off rates across the operational population. The minimum sample size requirements apply to each cohort.

14.5.6 | **Data Correlation and Cross-Checks:** Sampling results are expected to correlate with other relevant data sources. If activity-specific results differ significantly from relevant data sources and lead to less conservative results, the activity shall provide justification. If the justification is not accepted by the VVB, the more conservative results from other data sources shall be substituted.

15| MONITORING REQUIREMENTS FOR ACTIVITIES WITH REVERSAL RISKS

15.1.1 | As established in Section 12|, the mitigation outcomes under this methodology are emission avoidances that are permanent and not subject to reversal; the activity stores no carbon in any reservoir. Monitoring of reversal events (e.g. of stored carbon stocks) and Reversal Risk Buffer Pool mechanisms are therefore not applicable.

15.1.2 | Activity-performance risks (technology failure, drop-off, water-quality decline) are addressed in full through Section 14. Baseline durability over time — the continued non-renewability of the biomass reservoir — is managed ex-ante through the dynamic-fNRB reassessment and Baseline Validation Rule at renewal (Section 12.2.2 |, Section 17.3 |).

16| APPLICATION TO PROGRAMME OF ACTIVITIES

16.1.1 | General requirements: This methodology is applicable to Programmes of Activities (PoA). The Coordinating/Managing Entity (CME) shall comply with this methodology and the latest version of GS4GG Programme of Activities Requirements.

16.1.2 | **Additionality Demonstration:** Additionality shall be demonstrated at the PoA and/or real case VPA level. The regular VPAs are deemed additional upon successful inclusion, provided they meet the eligibility criteria defined in the PoA-DD.

16.1.3 | **Baseline Determination:** The baseline scenario shall be defined at the real case VPA level. If the PoA covers heterogeneous regions with significantly different baseline conditions, distinct standardised baselines may be established for different VPA groups or regions. Each VPA shall determine its specific baseline scenario based on its local context, following the procedures in Section 7|.

16.1.4 | **Monitoring and Quantification:** The CME shall establish a centralised system for monitoring, data management, and QA/QC across all VPAs. The CME may apply cross-VPA sampling to determine monitored parameters (e.g., $M_{q,y}$, $U_{p,y}$, $X_{cleanboil,y}$) if the following conditions are met:

a | **Homogeneity:** The CME shall demonstrate that the VPAs included in the sampling group are homogeneous with respect to the parameters of interest. Homogeneity criteria shall be clearly defined in the PoA-DD/VPA-DD (e.g., similar technology type, geographic region, socio-economic context, and age cohort of the technology) and validated by the VVB.

b | **Statistical Validity:** The sampling plan shall ensure that the results meet the required 90/10 precision level (Section 14.5 |) for the entire group of VPAs represented by the sample, adhering to the relevant GS4GG/A6.4 sampling standards.

c | **Group Size Limitation:** Cross-VPA sampling is not permitted across groups larger than 10 VPAs.

16.1.5 | If the conditions for homogeneity are not met, sampling shall be conducted independently for each VPA or for smaller, homogeneous clusters of VPAs.

17| RENEWAL OF CREDITING PERIOD

17.1 | Crediting Period Renewal Requirements

17.1.1 | The crediting period is a maximum of five years, renewable twice (total of 15 years). At the renewal, the activity developer shall apply the latest version of this methodology available at the time of submission for renewal.

17.2 | Reassessment of the Baseline Scenario

17.2.1 | The developer shall reassess the validity of the baseline scenario (Section 7.3.1 |), reviewing whether the water boiling assumption (including suppressed demand) remain appropriate given changes in water infrastructure, economic conditions, and technological adoption. If the reassessment confirms that the baseline scenario is no longer valid, a new baseline scenario shall be identified and justified following the procedures in Section 7|.

17.3 | Update of Baseline Parameters

17.3.1 | The activity developer shall update all relevant ex-ante baseline parameters to reflect the current circumstances to prevent the crediting of emission reductions that would have occurred due to autonomous improvements including but not limited to, water infrastructure, stove efficiency, or fuel switching. The following parameters shall be reassessed and updated:

a | **Regulatory Framework:** Update the analysis of the regulatory framework for safe water supply (SDWS 4) to ensure the activity remains surplus to regulations.

b | **Water Sources and Practices:** Reassess the water sources available in the activity boundary (SDWS 5) to determine if access to improved sources (e.g., expansion of public reticulated networks, new boreholes) has changed.

c | **Baseline Technologies and Fuels:** Update the assessment of baseline stove technologies (SDWS 6), stove efficiency (η_{wb}, SDWS 11), and the baseline fuel mix (x_f, SDWS 8) used for boiling water.

d | **Proportion Using Safe Water (C_b):** Update the proportion of the target population who would be using safe water (not requiring boiling) in the absence of the activity (SDWS 12).

e | **Fraction of Non-Renewable Biomass ($f_{NRB,f,y}$):** Update the $f_{NRB,f,y}$ value (SDWS 25) in accordance with the requirements of the standardized tool applied.

f | **CWT/CWS Performance Verification:** Re-demonstrate that the CWT/CWS technology performance meets the required quality standards at the PoC (SDWS 3).

17.3.2 | The updated parameters shall be used for the calculation of the crediting baseline for the renewed crediting period.

17.3.3 | **Baseline updates in saturated areas**

17.3.4 | Where high market penetration or total saturation within the defined activity boundary makes identification of a representative sample baseline users infeasible, the baseline parameters—specifically the Proportion using Safe Water (C_b), Baseline Fuel Mix (x_f), and Baseline Stove Efficiency (η_{wb})—shall be updated using the hierarchical approach defined below. The activity developer shall justify the selected approach, and the VVB shall validate its appropriateness.

17.3.5 | **Prohibited Approach: Reversion Testing** Asking activity participants to revert to using baseline methods (e.g., boiling water) for the purpose of a baseline survey is not permitted as acclimatised behaviour is unrepresentative of the true baseline.

17.3.6 | **Hierarchical Approach for Baseline Update:**

17.3.6.1 | **Identification and testing of a proxy control group**: The activity developer shall identify a proxy control group located outside the immediate activity boundary that is statistically comparable to the activity participant population and continues to rely on the baseline water sources and treatment practices (e.g., boiling).

a | **Criteria for Proxy Control Group Selection:** The proxy control group shall be comparable to the activity participants in all material aspects that influence water boiling and fuel consumption patterns. This includes, but is not limited to:

i. Socio-economic and demographic characteristics (e.g., income levels, household size).

ii. Geographic and environmental conditions (e.g., climate, altitude, agro-ecological zone).

iii. Water Access Profile (e.g., distance to water sources, type of unimproved sources available, presence/absence of public water infrastructure).

iv. Fuel availability and accessibility (e.g., type of fuel used, market cost, reliance on purchased vs. collected fuel).

v. Baseline Technology Type (The stove technology predominantly used in the proxy group shall be the same as the baseline technology identified for the activity activity).

vi. Absence of Interventions: The proxy group shall not be significantly impacted by other similar safe water or clean cooking interventions.

b | **Demonstration of Comparability:** The activity developer shall provide a rigorous, quantitative demonstration that the Proxy Control Group is statistically comparable to the activity population. Comparability shall be established by comparing the key characteristics of the Proxy Control Group (measured currently) against the characteristics of the Activity Area measured at the start of the preceding crediting period.

c | **Execution of Survey:** Once comparability is validated, the Baseline Scenario Survey shall be conducted within the Proxy Control Group. The results shall establish the updated parameters for the renewed crediting period.

17.3.6.2 | **Conservative Carry-Forward with Autonomous Improvement Factor (AIF)**: This approach may *only* be used if the activity developer provides verifiable evidence that identifying a suitable Proxy Control Group (Approach 1) is infeasible (e.g., due to widespread adoption of improved technologies in surrounding regions). The justification for infeasibility shall be validated by the VVB. In this case, the activity developer may carry forward the baseline parameters established at the start of the previous crediting period. However, the resulting Baseline Emission Factor (EF_b) shall be adjusted by an Autonomous Improvement Factor (AIF) to conservatively account for improvements in stove efficiency, water access, or fuel switching that likely would have occurred in the absence of the activity over the preceding 5 years.

a | **Application of Autonomous Improvement Factor (AIF):** A mandatory, conservative AIF of 5% per 5-year crediting period shall be applied.

$$EF_{b,renewal} = EF_{b,Previous\ CP} \times (1 - AIF), \textit{ Where AIF = 0.05}$$

17.3.6.3 | This adjusted value $EF_{b,renewal}$ shall then be used as the basis for the baseline calculation for the renewed crediting period, subject to the standard uncertainty adjustments (Section 7.4.1 |).

17.3.6.4 | Exception for Suppressed Demand: If the activity used the Suppressed Demand (Minimum Service Level) baseline in the previous crediting period, this fallback approach (AIF) is not applicable. The activity shall continue to use the MSL baseline for the renewed crediting period, provided the VVB validates that the conditions for suppressed demand still exist.

17.3.7 | The DAF will continue to be applied based on the calendar year of the monitoring period, using the values defined in the latest DAF Determination Tool

17.4 | Reassessment of Additionality

17.4.1 | The Regulatory Analysis (Section 6.3 |) shall be updated. If new, fully enforced, and funded legal mandates have come into force that legally require the activity, the crediting period shall not be renewed.

17.4.2 | Ongoing Financial Need (OFN): The activity developer shall demonstrate OFN in accordance with Section 6.8 |.

ANNEX -1| USAGE SURVEY REQUIREMENTS (HWT/IWT TECHNOLOGIES)

A 1.1| Introduction and Purpose

A 1.1.1| This Annex provides mandatory guidelines for the design and execution of usage surveys for Household Water Treatment (HWT) and Institutional Water Treatment (IWT) technologies (Method 2).

A 1.1.2| The primary objective of the usage survey is to determine the Usage Rate ($U_{p,y}$) (SDWS 34), which is applied as an adjustment in the calculation of baseline emissions (Section 7.4.1 |). The survey also informs the parameter $X_{cleanboil,y}$ (**SDWS**).

A 1.2| General Requirements

A 1.2.1| **Survey Design and Documentation:** The activity developer shall design a context-specific usage survey based on these guidelines. The specific survey template, including the exact questions adapted to the activity technology, and the defined criteria for classifying a premise as a "User" versus a "Non-User" for each topic area, shall be included in the PDD/VPA-DD and validated by the VVB.

A 1.2.2| **Sampling Requirements:** All surveys shall comply with the sampling requirements detailed in Section 14.5 |

a.| **Precision:** Results shall achieve 90/10 precision (90% confidence, 10% margin of error). If this precision is not met, mandatory statistical conservativeness shall be applied (Section 7.4.1 |).

b.| **Cohort Stratification:** Sampling shall be representative of the distribution of technology ages. Stratification by age cohorts (e.g., Year 1, Year 2, etc.) is mandatory to accurately capture adoption and drop-off rates over time. A minimum sample size (as defined in Section 14.5 |) is required for each cohort assessed.

A 1.2.3| **Bias Minimization and QA/QC:** Activity Developers shall implement robust QA/QC procedures to minimize bias and ensure data quality:

a.| **Enumerator Training:** Ensure thorough training on the survey instrument, the specific technology, and techniques for unbiased interviewing and accurate observation.

b.| **Timing:** Surveys should not be conducted immediately following awareness programs, hygiene campaigns (SDWS 24), or maintenance visits in the target premises.

c.| **Identification:** Surveyors should minimize visual identification with the implementing organization (e.g., avoiding branded attire) where this may influence responses.

d.| **Data Validation:** Implement systematic data cross-checks and supervisory back-checks on a sample of the completed surveys.

A 1.3| Definition of a "User"

A 1.3.1| The activity developer shall define the minimum frequency of use required to classify a premise as a "User." The methodology default criterion is the use of technology at least once every two days. Alternative definitions may be proposed if robustly justified based on local practices and technology specifics, subject to VVB validation.

A 1.4| Survey Modalities and Usage Calculation

A 1.4.1| The activity developer shall select one of the following two modalities for conducting the usage survey.

A 1.4.2| **Option 1: In-Person Survey**

a.| **Methodology:** Conducted via direct visits to the activity premises (households or institutions).

b.| **Required Topics:** Shall cover all applicable topics outlined in Section A.1.5 (Topics 1-6), using both self-reporting and direct observation.

c.| **Definition of User:** Premises that meet the minimum frequency threshold (Topic 2) AND successfully meet the criteria defined for all other applicable topics (1, 3-6).

d.| **Calculation of Up,y:** $U_{p,y}$ = (Number of Users identified) / (Total number of premises surveyed)

A 1.4.3| **Option 2: Remote Survey**

a.| **Methodology:** Conducted via telephone or messaging (e.g., text, app), appropriate to the context.

b.| **Required Topics:** Shall cover Topics 1, 2, and 3 outlined in Section A.1.5. Relies entirely on self-reporting.

c.| **Definition of User:** Premises that meet the minimum frequency threshold (Topic 2) AND successfully meet the criteria defined for Topics 1 and 3.

d.| **Calculation of $U_{p,y}$:** To account for the higher uncertainty and lack of direct observation inherent in remote surveys, a mandatory discount factor is applied.

$U_{p,y}$ = (Number of Users identified) / (Total number of premises surveyed) × 0.75

A 1.5| Mandatory Survey Topics

A 1.5.1| The survey shall cover the topics outlined below. The Activity Developer should adapt the example questions according to the specific activity technology and local context.

Topic 1: Confirmation of Water Treatment and Respondent Identification

Objective: Establish if the household treats water, confirm the use of the project technology, and ensure the correct respondent is interviewed.

Modality: Option 1 (In-person), Option 2 (Remote)

Data Collection Method: Self-Reporting

Key Actions and Example Questions

1. Identify water treatment practices: Ask if the respondent does anything to make their water safer to drink (without prompting specific methods).

Q: Do you usually do anything to your water to make it safer to drink?

2. Identify technology used: If yes, ask what method they use (without prompting).

Q: How do you make this water safer to drink? (Verify the activity technology is mentioned).

3. Identify primary user: Ask if the person being interviewed is the primary user/operator of the activity technology.

Q: Are you the main person responsible for operating the [Technology Name] in this household/institution?

Expected Outcome: The respondent confirms use of the activity technology. The primary user/operator is responding to the survey. If the primary user is not present, the survey should be rescheduled (In-person) or the contact details of the primary user obtained (Remote).

Topic 2: Frequency and Recency of Use

Objective: Determine how often the technology is used and when it was last used to quantify usage frequency against the established threshold.

Modality: Option 1 (In-person), Option 2 (Remote)

Data Collection Method: Self-Reporting

Key Actions and Example Questions

1. Determine usage frequency: Ask how often the respondent treats water using the activity technology.

Q: How often do you use the [Technology Name] to filter/treat water? (e.g., daily, every other day, weekly)

2. Determine recency of use: Ask when the technology was last used.

Q: When was the last time you used the [Technology Name]?

3. Confirmation of minimum threshold: Confirm usage meets the minimum required frequency (e.g., default of once every two days).

Q: Have you used the [Technology Name] in the last two days?

Expected Outcome: The user demonstrates regular usage consistent with the definition of a "User" (A.1.3).

Topic 3: Safe Water Storage and Handling
Objective: Assess whether treated water is stored safely to minimize recontamination risks (critical for maintaining safety at PoU).
Modality: Option 1 (In-person: Reporting and Observation), Option 2 (Remote: Reporting only)
Data Collection Method: Self-Reporting and Direct Observation (Option 1 only)
Key Actions and Example Questions
1. Identify storage practices: Ask how the respondent stores the treated water. *Q: How do you store the water after treating it with the [Technology Name]?*
2. Observe storage container (Option 1 only): Ask to see the storage container and verify if it meets safe storage criteria (e.g., has a lid/cover, narrow mouth or spigot/tap; appears clean). ***Action:** Observe the container and record characteristics.*
3. Verify presence of treated water: Check/ask if there is currently treated water stored. *Q: Is there currently water treated by the [Technology Name] in this container?*
Expected Outcome: The user employs safe storage practices. For Option 1, a safe storage container is observed, ideally containing treated water.

A 1.5.2| The following topics are mandatory for Option 1 (In-Person) only.

Topic 4: Visual Inspection of Technology (Option 1 Only)
Objective: Verify the physical presence, condition, and apparent functionality of the activity technology.
Modality: Option 1 (In-person)
Data Collection Method: Direct Observation
Key Actions and Example Observations
1. Verify presence and assembly: Observe the technology and confirm it matches the activity records and is assembled correctly. *Action: Observe the unit. Is it present? Is it assembled correctly?*
2. Assess condition: Inspect the unit for visible damage, cleanliness, or signs of malfunction.

Action: Record the condition (e.g., Clean/Dirty; Intact/Damaged; Appears functional/Not functional).

3. Check for signs of recent use: Look for indicators that the device has been used recently (e.g., water present in the filter, dampness around the unit).

Action: Record evidence of recent use.

Expected Outcome: The technology is present, correctly assembled, in good condition, and shows evidence of recent use. Units found to be non-functional or clearly unused shall be classified as non-users.

Topic 5: Demonstration of Knowledge (Option 1 Only)

Objective: Assess the user's knowledge of correct operation and maintenance procedures.

Modality: Option 1 (In-person)

Data Collection Method: Self-Reporting / Demonstration

Key Actions and Example Questions

1. Assess operational knowledge: Ask the user to describe or demonstrate how they use the technology.

Q: Can you show me or describe how you use the [Technology Name] to treat water?

***Action:** Observe whether the HWT/IWT unit is currently functional, e.g. tap and filter element are functional.*

2. Assess maintenance knowledge: Ask about cleaning and maintenance procedures and frequency.

Q: How often do you clean the [Technology Name]? How do you clean it?

3. Assess consumable management (if applicable): Ask about the replacement of filters or use of chlorine.

Q: When was the last time you replaced the filter cartridge / purchased chlorine?

Expected Outcome: The respondent demonstrates adequate knowledge of the correct operation and maintenance procedures necessary for the technology to function effectively.

WHO 2012 - A toolkit for monitoring and evaluating household water treatment and safe storage programmes**. (Table 1, p 19, Indicator 2 (as for topic 4) & Table 2, p 20.**

Topic 6: Satisfaction and Barriers (Option 1 Only)

Objective: Understand user satisfaction, identify any barriers to use, and identify continued use of baseline practices (boiling).

Modality: Option 1 (In-person)

Data Collection Method: Self-Reporting

Key Actions and Example Questions
1. Assess satisfaction: Ask about the user's satisfaction with the technology. *Q: Are you satisfied with the [Technology Name] (e.g., taste, ease of use, time required)? Why or why not?*
2. Identify barriers: Ask if there are times when they do not use the technology and why. *Q: Are there situations when you do not use the [Technology Name]? (e.g., no time, broken, seasonal issues). What do you do instead?*
3. Check for continued boiling (Cross-check SDWS **):** Ask if they still boil water for drinking after treatment. *Q: Do you sometimes boil the water after it comes out of the [Technology Name]? If yes, how often?*
Expected Outcome: The user expresses satisfaction and identifies no insurmountable barriers to consistent use. Information gathered informs corrective actions and the calculation of $X_{cleanboil,y}$.
WHO 2012 - A toolkit for monitoring and evaluating household water treatment and safe storage programmes**. (Table 1, p 19, Indicator 2 (as for topic 4)**

ANNEX -2| COMPLEMENTARY GUIDELINES FOR WATER CONSUMPTION FIELD TEST (WCFT)

A 2.1| Introduction and Purpose

A 2.1.1| This Annex provides mandatory guidelines for the design and execution of a Water Consumption Field Test (WCFT).

A 2.1.2| The objective of the WCFT is to determine the activity-specific value for QPW_p (Volume of drinking water per person per day) (SDWS 29). The WCFT is an alternative to applying the methodology default values (Section 7.3.11 |).

A 2.1.3| The WCFT measures the actual consumption of safe water provided by the activity technology exclusively for drinking and hydration purposes under field conditions. Water consumed for other purposes shall be rigorously excluded.

A 2.2| General Requirements

A 2.2.1| **Representativeness:** The WCFT shall be conducted with end-users representative of the target population actively using the activity technology. The design shall ensure monitoring is representative of typical daily water consumption patterns.

A 2.2.2| **Conservativeness and Transparency:** The WCFT protocol shall be transparent, replicable, and designed to yield conservative results.

A 2.2.3| **Frequency:** If the WCFT option is chosen, it shall be repeated biennially (every two years).

A 2.2.4| **Duration:** The WCFT shall be conducted over a minimum period of 3 consecutive days (72 hours). Weekends or holidays should be excluded if consumption patterns during these times are significantly different from typical days.

A 2.2.5| **Sampling:** The sample shall be randomly selected and comply with the requirements detailed in Section 14.5 |, achieving 90/10 precision (Minimum sample size required is 50).

A 2.2.6| **Seasonality:** The WCFT design shall account for the impact of seasonal variations on water consumption (e.g., increased intake during hot/dry seasons).

a.| **Preferred Approach:** Conduct stratified sampling across different seasons to determine a weighted annual average.

b.| **Alternative Approach:** If a single WCFT is conducted, it shall be during the period of expected average or lower consumption to ensure conservativeness. If conducted during the high consumption season, a conservative adjustment factor shall be applied to estimate the annual average. The approach shall be justified and validated by the VVB.

A 2.2.7| **QA/QC and Ethics:**

a.| **Enumerator Training**: Thorough training on the WCFT protocol, accurate volumetric measurement, and techniques for verifying the differentiation of water uses is mandatory.

b.| **Equipment Calibration**: All equipment used for volumetric measurement (e.g., graduated cylinders, calibrated storage containers) shall be verified for accuracy.

c.| **Informed Consent**: Participants shall provide informed consent and be explicitly instructed to maintain their normal daily water consumption patterns.

A 2.3| Data Collection Methodology

A 2.3.1| The activity developer shall select the most appropriate measurement method. Method A is strongly preferred for HWT/IWT and non-piped CWT/CWS due to its higher accuracy in isolating drinking water use.

Method A: Dedicated Storage Measurement (Preferred)

A 2.3.2| This approach physically isolates the drinking water supply during the test period.

A 2.3.3| **Initial Visit (Day 0 / Setup)**:

a.| **Demographics**: Record the number of individuals ($HN_{p,y}$) consuming water during the test period, disaggregated by age group (corresponding to the caps in Section 7.3.11 |).

b.| **Equipment Setup**: Provide the premises with standardised, graduated safe storage container(s) (e.g., with clear volume markings and a tap/spigot).

c.| **Isolation Instruction (Crucial)**: Instruct participants that during the test period (Days 1-3), this container shall only be filled with water treated by the activity technology, and water from this container shall only be used for Included Uses (See A.2.3.1). Water for all Excluded Uses shall be stored separately.

d.| **Baseline Measurement**: Fill the container(s) to a clearly marked level and record the initial volume ($V_{previous}$).

A 2.3.4| **Monitoring (Days 1-3)**:

a.| **Daily Visits**: Visit the premises at the same time each day (± 1 hour).

b.| **Measure Remaining Volume**: Record the volume of water remaining ($V_{remaining}$).

c.| **Calculate Daily Consumption**: Calculate the volume consumed since the last measurement ($V_{consumed} = V_{previous} - V_{remaining} + V_{refill}$).

d.| **Refill and Record**: Refill the container as needed, recording the exact volume added (V_{refill}). The new total volume becomes the starting point for the next day ($V_{previous}$).

e.| **Verification Interview**: Briefly interview the participants daily to confirm adherence to the instructions and identify any spills or

accidental use for Excluded Uses. These volumes ($V_{excluded}$) shall be recorded and deducted from $V_{consumed}$.

Method B: Metering and Allocation (Piped Systems Only)

Note: This method is applicable only for piped CWT/CWS systems with accurate household-level metering. It has higher uncertainty due to reliance on self-reporting for allocation.

A 2.3.5| **Initial Visit (Day 0 / Setup)**:

a.| **Demographics:** Record $HN_{p,y}$(disaggregated by age group).

b.| **Meter Verification and Reading:** Verify the household water meter and record the starting reading ($M_{previous}$).

c.| **Usage Log Training:** Train the primary water manager at the premises on maintaining a detailed water usage allocation log.

A 2.3.6| **Monitoring (Days 1-3)**:

a.| **Daily Visits:** Visit the premises at the same time each day.

b.| **Meter Reading:** Record the meter reading ($M_{current}$).

c.| **Calculate Total Daily Consumption:** $V_{total} = M_{current} - M_{previous}$.

d.| **Allocation Interview/Log Review:** Conduct a detailed interview and review the usage log to estimate the proportion of water used exclusively for included uses ($P_{drinking}$). The methodology for this estimation shall be conservative, justified based on local practices, and validated by the VVB. The proportion allocated to drinking ($P_{drinking}$) shall not exceed 50% of total metered volume unless corroborated by a rigorous usage study.

A 2.3.7| **Differentiation of Water Use (Applicable to both Methods):** The WCFT shall accurately differentiate between the following uses:

a.| **Included Uses (Hydration):** Direct drinking, preparing cold beverages, tea/coffee (if prepared with pre-treated safe water), and use in uncooked food preparation where the water is consumed.

b.| **Excluded Uses:** Cooking (where the water is subsequently boiled), bathing, hygiene, cleaning, livestock, or gardening.

A 2.4| Data Analysis and Calculation

A 2.4.1| Calculate Daily Consumption per Premises ($C_{h,h,day}$):

Method A: $Ch_{h,day} = V_{consumed} - V_{excluded}$

Method B: $Ch_{h,day} = V_{total} \times P_{drinking}$

A 2.4.2| **Outlier Analysis:** Analyze the dataset for outliers using recognized statistical methods. Outliers shall be investigated and excluded only if a clear justification (e.g., measurement error, protocol violation, non-representative event) is documented. The exclusion shall not lead to a less conservative result.

A 2.4.3| **Calculate Mean Consumption per Premises:** Average the daily consumption over the 3-day test period for each premise ($C_{h,h,avg}$).

A 2.4.4| **Calculate Mean Consumption per Capita ($QPW_{p,mean}$)**:

a.| **Calculate the per capita consumption for each premise:** $C_{capita} = C_{h,havg} / HN_{p,y}$

b.| Calculate the mean per capita consumption across the entire sample ($\boldsymbol{QPW_{p,mean}}$).

A 2.4.5| **Statistical Adjustment and Uncertainty (Determination of QPW_p)**: The uncertainty associated with the WCFT sampling results shall be addressed using the 90/10 rule (Section 14.5 |).

a.| **If the 90/10 Rule is met:** The Mean value shall be used.

$$QPW_p = QPW_{p,mean}$$

b.| **If the 90/10 Rule is NOT met:** The Lower Bound of the one-sided 90% confidence interval shall be used (A lower consumption value is conservative as it reduces the calculated emission reductions).

$$QPW_p = QPWp_{p,LB90}$$

A 2.4.6| **Application of Caps:** The final value determined in Step 5 shall be capped according to the tiered thresholds defined in Section 7.3.11 | (Table 9). The overall maximum cap is as per table 9.

$$QPW_p = \text{MIN}(QPW_p, 5.5)$$

ANNEX -3| ACTIVITY PREPARATION AND MONITORING SCHEDULE

A 3.1.1| This Annex summarizes the required assessments, studies, and monitoring activities throughout the activity lifecycle. Activity Developers shall use this schedule to plan the implementation of the Monitoring Plan (Section 14|).

A 3.2| Ex-Ante and Baseline Assessments

A 3.2.1| The following activities shall be conducted ex-ante, typically during the activity design phase and prior to Design Certification, to establish the baseline scenario, demonstrate applicability, and assess additionality.

Table A3.1: Ex-Ante and Baseline Assessments (Prior to Start of Crediting Period)

Activity/Assessment	Methodology Reference	Key Parameters	Description and Requirements
Applicability and Safeguards Assessments			
Regulatory Framework Analysis	Sec 3.3.2, 6.3	SDWS 4	Analyze national/local regulations for SDW supply to confirm compliance and regulatory surplus.
Technology Performance Verification (HWT/IWT)	Sec 3.2.7	SDWS 2	Verify compliance with national standards or WHO International Scheme (2/3-star).
Technology Performance Verification (CWT/CWS)	Sec 3.2.8	SDWS 3	Conduct initial water quality testing (PoC) to verify compliance with microbial and chemical standards.
Accessibility Assessment (CWT/CWS)	Sec 3.2.6	SDWS 1	Define the accessible boundary (1km/30min or justified exception) and identify eligible premises.
Rehabilitation Evidence (CWT/CWS)	Sec 3.2.5	SDWS 2	(If applicable) Document evidence of prior non-operation (≥3 months) and lack of repair plan.
Technical Life Determination	Sec 3.3.4, 6.4	SDWS 7	Determine expected technical life and plan for replacement/retrofit if shorter than the Crediting Period.
Additionality Demonstration			
Additionality Assessment	Sec 6	N/A	Conduct Regulatory Surplus, Lock-In Risk, Common Practice,

			and (if applicable) Investment/Barrier Analysis.
Baseline Scenario Establishment			
Baseline Scenario Survey(s)	Sec 7.3	SDWS 5, SDWS 6, SDWS 8, SDWS 11, SDWS 12	Conduct surveys or utilize recent literature (≤3 years old) to determine: • Water sources (Improved/Unimproved) (SDWS 5) • Baseline stove technologies and proportions (SDWS 6) • Baseline fuel mix (x_f) (SDWS 8) • Baseline stove efficiency (η_{wb}) (SDWS 11) • Proportion already using safe water (C_b) (SDWS 12)
Suppressed Demand Assessment	Sec 7.3.2	N/A	(If applicable) Justify the application of suppressed demand and confirm MSQS compliance.
fNRB Determination	Sec 7.3.3	SDWS 25	Determine the fraction of non-renewable biomass using standardized tools. Select monitoring frequency (fixed ex-ante, biennial, or variable).
Leakage and Double Counting			
Leakage Assessment (Ex-ante)	Sec 9.3	SDWS 40	Conduct ex-ante evaluation of market/behavioral leakage risks and select assessment Option (1, 2, or 3).
Double Counting Mitigation	Sec 3.2.13	SDWS 18, SDWS 19, SDWS 20	Establish ownership rights, notify end-users, and conduct overlap assessment with other mitigation actions.

A 3.3| Periodic Monitoring Requirements

The following activities shall be conducted periodically (annually or biennially) throughout the crediting period during monitoring and verification.

Table A3.2: Periodic Monitoring Requirements (During Crediting Period)

Activity/ Assessment	Frequency	Methodology Reference	Key Parameters	Description and Requirements
Compliance and Performance Monitoring				
Water Quality Testing (Point of Use)	Annually	Sec 7.4.2, 14.4.2 |	SDWS 22 ($M_{q,y}$)	Conduct PoU testing to determine the Water Quality Modifier ($M_{q,y}$). Implement corrective actions if thresholds are exceeded. (All activities).
Water Quality Testing (Point of Collection)	Annually	Sec 14.4.2 |	N/A	Conduct PoC testing to verify infrastructure performance. (CWT/CWS only).
Usage Survey (HWT/IWT)	Annually	Annex 1	SDWS 34 ($U_{p,y}$) SDWS 26 ($X_{cleanboil,y}$)	Conduct survey (In-person or Remote) to determine Usage Rate and continued boiling. Requires cohort stratification.
Operational Monitoring (CWT/CWS)	Annually	Sec 14.3	SDWS 28 ($Q_{m,y}$) SDWS 32 ($DO_{p,y}$)	Monitor quantity supplied (via meter, sensor, or alternative) and operational days (via sensor or maintenance logs).
Water Consumption Field Test (WCFT)	Biennially*	Annex 2	SDWS 29 (QPW_p)	(Conditional) Conduct WCFT if Option 2 (activity-specific value) is selected instead of defaults.
Safeguards and Co-Benefits				
Water Hygiene Education Campaigns	Annually	Sec 3.2.10	SDWS 24	Conduct and report on hygiene education activities and assess impacts.
SDG Monitoring	Annually	Sec 3.2.12	SDWS 23	(Optional) Monitor parameters for SDG claims (e.g., SDG 6 service levels).
Population and Activity Emissions				
Population Monitoring	Annually	Sec 14.3	SDWS 30 ($HN_{p,y}$) SDWS 31, SDWS 29	Monitor individuals per premises, premises served (CWT/CWS), and accumulated premises (HWT/IWT).

Activity Emissions Monitoring	Annually	Sec 8.2	SDWS 38, SDWS 39	Monitor fossil fuel consumption (verify <10% use limit) and electricity consumption.
Leakage and Baseline Updates				
Leakage Investigation	Biennially*	Sec 9.3	SDWS 40	(Conditional) Conduct leakage investigation if Option 3 (Detailed Assessment) is selected.
fNRB Update	Biennially or Variable*	Sec 14.3	SDWS 25	(Conditional) Update fNRB value if fixed ex-ante option was not chosen.

*Frequency applies only if the corresponding methodological option is selected.

A 3.4| Crediting Period Renewal Requirements

The following activities shall be conducted at the time of application for the renewal of the crediting period (every 5 years).

Table A3.3: Crediting Period Renewal Requirements (Every 5 Years)

Activity/Assessment	Methodology Reference	Key Parameters	Description and Requirements
Methodology Update	Sec 17.1	N/A	Apply the latest version of the methodology.
Baseline Reassessment	Sec 17.2	N/A	Reassess the validity of the baseline scenario (including suppressed demand assumptions).
Update of Baseline Parameters	Sec 17.3	All ex-ante parameters	Update all relevant ex-ante parameters, including: • Regulatory Framework (SDWS 4) • Baseline technologies, fuel mix, and efficiency (SDWS 6, SDWS 8, SDWS 11) • Proportion using safe water (C_b) (SDWS 12) • fNRB (SDWS 25)
Additionality Reassessment	Sec 17.4	N/A	Update Regulatory Surplus and Common Practice Analysis.
Ongoing Financial Need Demonstration	Sec 6.8, 17.4	N/A	Demonstrate that the activity still requires carbon revenues to remain operational and sustainable.

CWT/CWS Performance Re-verification	Sec 17.3	SDWS 3	Re-conduct water quality testing (PoC) to verify continued compliance with standards.

ANNEX -4| DEFINITION OF WATER SOURCES

Reference: JMP 2018 core questions for household surveys

Definitions of improved sources of drinking water	Notes on classification
• **Piped into dwelling:** also called a 'household connection', is a piped water supply connected with in-house plumbing to one or more taps (for example in the kitchen or bathroom). • **Piped into compound, yard or plot:** also called a 'yard tap', is a piped water supply connected to a tap in the compound, yard or plot outside the house. • **Piped to neighbour:** refers to a household obtaining drinking water from a neighbour's piped water supply (household connection or yard tap). • **Public tap or standpipe:** also known as a public fountain, is a public water point from which people can collect water. • **Borehole or tubewell:** is a deep hole that has been driven, bored or drilled, in order to reach groundwater. Boreholes/tubewells are constructed with casing, or pipes, which prevent the small diameter hole from caving in and protect the water source from infiltration by run-off water. Water is delivered through a pump which may be powered by human, animal, wind, electric, diesel or solar means. • **Protected well:** is a dug well that is protected from runoff water by a well lining or casing that is raised above ground level to form a headwall and an apron that diverts spilled water away from the well. A protected well is also covered so that contaminated materials (including bird droppings and small animals) cannot enter the well. Water is delivered through a pump or manual lifting device. • **Protected spring:** is a natural spring protected by a "spring box", made of brick, masonry, or concrete, that is built around the spring so that water flows directly out of the box into a pipe or cistern, without being exposed to runoff or other sources of contamination. • **Rainwater collection:** refers to a system whereby rain is collected or harvested from large surfaces (by roof or ground catchment) and stored in a container, tank or cistern until used. • **Tanker-truck:** refers to water sold or distributed by a provider who transports large quantities of water into a community using a motorized truck with a tank. • **Cart with small tank/drum:** refers to water sold or distributed by a provider who transports a tank or drum with small quantities of water into a community using donkey carts, small motorized vehicles and other means. • **Water kiosk:** refers to a water point from which water is sold in small quantities. Households typically bring their own containers to be filled. • **Bottled water:** is sold by commercial providers in small or large bottles or refillable containers. This does not include water from other sources stored in plastic bottles. • **Sachet water:** is similar to bottled water but is packaged in a plastic bag rather than a bottle.	1. The term **drinking water source** refers to the point from which water is collected (for example the tap or borehole/well/spring) and not the origin of the water supplied (for example surface water or groundwater). 2. **Improved drinking water sources** are those which by nature of their design and construction have the potential to deliver safe water. Improved sources include: piped water, boreholes or tubewells, protected dug wells, protected springs, rainwater and packaged or delivered water. 3. **Packaged and delivered water** can potentially deliver safe water but were previously treated as unimproved due to lack of data on accessibility, availability and quality. For SDG monitoring the JMP will treat them as '**improved**' and classify them as limited, basic or safely managed based on the new SDG criteria. 4. **Public taps or standpipes** can have one or more taps. They are typically made of brickwork, masonry or concrete and located in public spaces. Households using privately owned taps in a neighbour's yard should be classified as '**piped to neighbour**'. 5. **Boreholes** from which water is pumped into an overhead tank which supplies households in the same compound, should be classified as '**borehole or tubewell**'. However boreholes delivering water to an overhead tank which supplies multiple compounds through a reticulated piped system should be classified as one of the types of '**piped water**', depending on where the household collects the water. 6. **Protected wells** may be fitted with a range of lifting devices (for example motorized pumps, hand pumps, ropes and windlasses with buckets) but if the well lacks a cover then it should be classified as '**unprotected well**'. 7. **Rainwater collection** comprises a range of different technologies designed to capture and store rainwater for drinking. Groundwater catchments require filtration and unfiltered surface water should be classified as '**surface water**'. 8. **Water kiosks** are similar to public standpipes, but with a more commercial approach to collecting fees. **Water refill stations** are similar to water kiosks, but operators typically provide households with dedicated containers that are then sanitized before being refilled. These should be classified as '**bottled water**'.
Definitions of unimproved sources of drinking water	**Notes on classification**
• **Unprotected well:** is a dug well that lacks any of the following: a lining or casing that is raised above ground level to form a headwall; an apron that diverts spilled water away from the well; a cover which prevents contaminated materials (including bird droppings and small animals) from entering the well; or a pump or manual lifting device. • **Unprotected spring:** is a natural spring that lacks a "spring box" to protect against run off and other sources of contamination (including bird droppings and animals). • **Surface water:** refers to open water sources located above ground including rivers, reservoirs, lakes, ponds, streams, canals, and irrigation channels.	9. **Unimproved drinking water sources** are those which by nature of their design and construction are unlikely to deliver safe water. Unimproved sources include: unprotected dug wells, unprotected springs, and surface water. 10. The term **drinking water source** refers to the point from which water is collected and not the origin of the water supplied. For example, piped water originating from a surface water reservoir would be classified as piped water, while water collected directly from a lake or river would be classified as surface water.

ANNEX -5| POSITIVE LIST FOR DEEMED ADDITIONALITY

A 5.1| Context and basis

A 5.1.1| This Annex provides a positive list of SDWS activity types whose additionality is deemed satisfied, applying the positive-list mechanism of the GS4GG Requirements for Additionality Demonstration (activity types of low risk to financial additionality, reviewed at least every three years). An activity meeting the conditions of A 5.2 is exempt from the activity-specific investment analysis and/or barrier analysis otherwise required under Section 6.

A 5.1.2| The evidentiary basis for this Annex — the financial non-viability of supplying safe-water technologies to the target population at a cost-recovering price, the documented low effective demand and willingness-to-pay, and the behavioural barriers to autonomous adoption — is established in Supplementary Information, Section 5. Deemed additionality does not exempt an activity from any other requirement of this methodology, including common practice (Section 6.7 |), Regulatory surplus (Section 6.3 |), the Lock-in provisions (Section 6.4 |) and the baseline, monitoring and leakage rules.

A 5.2| Eligibility conditions

An activity is deemed additional under this methodology only where all of the following conditions are met, documented in the PDD/VPA-DD and validated by the VVB.

Condition 1 — Eligible technology

A 5.2.1| The activity deploys one or more technologies on the Positive List (Table A5.1).

Table A5.1. Positive List of SDWS activity types eligible for deemed additionality

Activity type	Eligible technologies	Baseline displaced
Household water treatment (HWT)	Ceramic/candle filters; biosand filters; membrane and UV point-of-use units; chlorination (dispensers, tablets, liquid); solar water disinfection (SODIS)	Boiling with non-renewable biomass, or untreated water
Institutional water treatment (IWT)	The above technologies at schools, health-care facilities or other institutions serving the target population	As above
Non-cost-recovering community dispensers	Gravity-fed or solar-powered safe-water dispensers provided without tariff or cost recovery	As above

Condition 2 — Eligible context

A 5.2.2| The target beneficiary population lacks access to safely managed drinking water at baseline (WHO/UNICEF JMP service ladder), and the activity is implemented in either:

a.| Tier 1 — a Least Developed Country (LDC) or Small Island Developing State (SIDS); or

b.| Tier 2 — another eligible developing-country host Party, where the target population is low-income (below the host Party's national poverty line; or, where none is established, the prevailing World Bank international poverty line for its income classification) and penetration of the relevant safe-water technology is below the common-practice threshold of Section 6.7(F_{max}).

Condition 3 — Financial condition (no full cost recovery)

A 5.2.3| The activity does not achieve full cost recovery from beneficiaries. Whether the technology is provided free or sold at a carbon-subsidised below-cost price, beneficiary payments do not fund the full delivered cost, and carbon finance is necessary to bridge the affordability gap. An activity that recovers its full cost from beneficiaries, or is financially viable without carbon finance, does not satisfy this condition.

Condition 4 — Regulatory condition

A 5.2.4| The activity is not mandated by any enforced law, regulation or binding policy of the host Party (consistent with Section 6.3).

A 5.3| Exclusions

A 5.3.1| The following are not eligible for deemed additionality and shall demonstrate additionality through the standard investment analysis and, where applicable, barrier analysis under Section 6:

a.| activities that achieve full cost recovery from beneficiaries or are financially viable without carbon finance (e.g. tariff-funded community water supply);

b.| activities in high-income or upper-middle-income host Parties, or serving populations already using safely managed drinking water;

c.| activities deploying technologies not listed in Table A 5.1.

A 5.4| Application, validity and review

A 5.4.1| To invoke deemed additionality, the activity developer shall document compliance with the above listed conditions in the PDD/VPA-DD.

A 5.4.2| This Positive List shall be reviewed at least every three years. Where an activity type is removed at review, activities of that type requesting renewal of the crediting period (Section 17|) shall thereafter demonstrate additionality through the standard route.

A 5.4.3| The full evidentiary basis for this Annex is set out in Supplementary Information, Section 5.

DOCUMENT INFORMATION

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