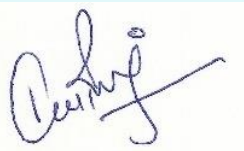


**Verification report form for GS4GG
Programme of Activity
(Gold Standard for the Global Goals)**

BASIC INFORMATION

Title of the GS4GG Programme of Activity (PoA)	Improved Cookstove and Safe Water Programme
Reference number of the Programmes of Activity (PoA)	GS 11189
Version number of the verification and certification report	2.0
Completion date of the verification and certification report	18/10/2023
GS ID (s) of VPAs under PoA	VPA ID: GS11289, GS11290, GS11291, GS11292, GS11293, GS11294, GS11295, GS11296, GS11297, GS11298, GS11299, GS11300, GS11301, GS11302, GS11303, GS11304, GS11305
Version number of the monitoring report to which this report applies	3.0
Completion date of the monitoring report to which this report applies	03/10/2023
Monitoring period no. and duration	3 rd 01/07/2022– 31/12/2022 (inclusive of both days)
Date of project design certification	02/02/2022
Crediting period of the PoA corresponding to this monitoring period	01/01/2021 – 31/12/2025
Project Representative	Impact Carbon LLC Impact Water LLC
Host Party	Kenya
Applied methodologies and standardized baselines	"Emission reductions from Safe Drinking Water Supply" Version 1.0 – 03/05/2021.
Activity requirements applied	☒ Community Services Activities ☐ Renewable Energy Activities ☐ Land Use and Forestry Activities/Risks & Capacities ☐ N/A

Product Requirements applied		☒ GHG Emissions Reduction & Sequestration ☐ Renewable Energy Label ☐ N/A	
Sustainable Development Goals Targeted	SDG Impact	Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period (01/07/2022–31/12/2022)	Units/Products
SDG 13: Climate Action	13.2.1 Amount of CO2e emissions reduced by the project per year	362,022	tCO ₂ e (VER)
SDG 1: No Poverty	1.4.1 Proportion of population living in households with access to basic services Indicator: Indicator: Total number of premises (Schools / institutions) with at least one WPS distributed / installed under the project	9,971	Number
SDG 3: Good Health and Well Being	3.9.2 Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services Indicator: % sampled Schools / institutions reporting reduction in incidence of diarrhoea and water borne diseases etc. after shifting to the project WPS	92.33%	Percentage
SDG 6: Clean Water and Sanitation	6.1.1 Proportion of population using safely managed drinking water services Indicator: % of WPS distributed/installed providing safe drinking water quality	87.89%	Percentage
SDG 7: Affordable and Clean Energy	7.1.2 Proportion of population with primary reliance on clean fuels and technology Indicator: % Schools / institutions reporting an operational WPS in project	96.51%	Percentage
SDG 8: Decent Work and Economic Growth	8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities	17	Number

	Indicator: Number of male / females employment created by project		
Name and UNFCCC reference number of the VVB	Earthood Services Private Limited E-0066		
Name, position and signature of the approver of the verification report	 Managing Director Dr. Kaviraj Singh		

SECTION A. Executive summary

The programme of activity “Improved Cookstove and Safe Water Programme” involves distribution of low GHG Water Purification technologies (WPS) to schools in Kenya. The PoA is using carbon finance to support local partners engaged in different activities like production, distribution, and maintenance of various product technologies particularly WPS. This programme includes technologies, designed to reduce GHG emission and supply safe water to institutions, which are efficient and meet the technology and measure requirements of the applied methodology: Emission reduction from Safe Drinking Water Supply, version 1.0. The distribution of WPS has provided institutions with safe and clean drinking water and no incidences of water borne diseases. This has also reduced the consumption of non-renewable biomass resources or fossil fuel for cooking purposes as well as eliminate the use of non-renewable resources or fossil fuel for water boiling. The PoA will also improve the indoor air quality and health of women and children as a co-benefit.

The VPAs under current verification are: GS11289, GS11290, GS11291, GS11292, GS11293, GS11294, GS11295, GS11296, GS11297, GS11298, GS11299, GS11300, GS11301, GS11302, GS11303, GS11304, GS11305.

Total emission reductions for this monitoring period period are 362,022 tCO₂e.

The PoA has been registered under GS4GG (GSID 11189) and the CME is Impact Carbon LLC and VPA Implementer is Impact Water LLC.

Scope of Verification

The scope of the services provided by the Earthood Services Private Limited is to perform verification of the PoA. The scope of verification is to assess the claims and assumptions made in monitoring report /5/ against the GS4GG criteria, UNFCCC criteria, including but not limited to the Gold Standard Principles & Requirements/1/, Gold Standard Programme of Activity Requirements/11/, Gold Standard Community Services Activity Requirements/12/, CDM PS for PoA/3/, CDM VVS for PoA/4/ and other relevant rules and requirements established for Gold Standard.

The scope of the services provided by Earthood Services Private Limited for the project is to perform verification of GS4GG programme of activity. The scope of verification is to assess the claims and assumptions made in the monitoring report /5/ against the GS4GG principles and requirements /1/ criteria and GS4GG VVB requirements /2/, including but not limited to, CDM PS for PoA /3/, CDM VVS for PoA/4/, applied methodology /8/ and other relevant rules and requirements established for GS4GG PoA.

Verification Process

This verification is an independent and objective review for determination of the monitored reductions in GHG emissions. The verification includes the implementation and operation of the PoA as reported in the registered PoA-DD, VPA-DD and monitoring report. The verification process is undertaken by verification team that involves the following:

- The desk review of documents and evidence submitted by the project participant in context of the GS4GG criteria along with reference CDM rules and guidelines issued by CDM EB,
- Undertaking remote audit, interview or interactions with the representatives of the CME and VPA Implementer,
- Reporting audit findings with respect to clarification and non-conformities and the closure of the findings as appropriate.
- Preparing a draft verification report of GS4GG programme of activities period complying with the GS4GG principles and requirements.
- Technical review of the draft verification opinion along with other documents as appropriate by an independent competent technical review team finalization of the verification opinion (this report)
- An independent technical review team reviews the verification report made by the verification team. After the final report is accepted by the Technical Reviewer it is then

approved by Earthood Services Private Limited which is processed further according to the GS and CDM procedures.

Conclusion

The review of the monitoring report, supporting documentation and subsequent follow up actions have provided ESPL with sufficient evidence to determine the fulfilment of stated criteria. Earthood is of the opinion that the PoA "Improved Cookstove and Safe Water Programme" (GS ID: 11189) meets all the GS requirements and has correctly applied the GS approved methodology, Emission reduction from Safe Drinking Water Supply, version 1.0/8/.

The GHG emission reductions were calculated correctly based on the approved methodology "Emission reduction from Safe Drinking Water Supply, version 1.0"/8/ and the monitoring plan contained in the registered PoA-DD/9/ and VPA-DD /10/.

Earthood Services Private Limited can certify that the emission reductions achieved in the monitoring period 01/07/2022– 31/12/2022 (inclusive of both days) by GS PoA "Improved Cookstove and Safe Water Programme" (GSID: 11189) amount to 362,022 tCO₂e. Therefore, this is being submitted for request for issuance, as per GS4GG and UNFCCC procedures.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team member

No	Role	Type of resource	Last name	First name	Affiliation (e.g., name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection*	Interview(s)	Verification findings
1.	Team Leader (GS approved auditor)	IR	Chaudhary	Anjali	Central Office	Y	Y	Y	Y
2.	Technical Expert (TA 3.1)	IR	Chaudhary	Anjali	Central Office	Y	Y	Y	Y
3.	Local Expert	EI	Njeri	Virginia	Central Office	Y	Y	Y	Y

*Remote audit using alternative means has been conducted, for further details refer section D.2 of this report

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

No.	Role	Type of resource	Last name	First name	Affiliation (e.g., name of central or other office of VVB or outsourced entity)
1.	Technical reviewer and TA expert to TR (TA 3.1)	IR	Mahala	Deepika	Central Office
2.	Approver	IR	Singh	Kaviraj	Central Office

SECTION C. Application of materiality in conducting the verification

C.1. Consideration of materiality in planning the verification

No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the risk		Response to the risk in the verification plan and/or sampling plan
		Risk level	Justification	
1.	Observational error by monitoring survey staff of CME/VPA implementer while recording the responses of users in relation to survey parameters	High	The survey is conducted for representative samples of population, which may impact the population significantly. Surveyors may be unsupervised at the site.	Verification team randomly selected the samples from CME surveyed sampled WPS. The recorded survey forms by CME were checked VVB during remote audit observations. The verification team also interviewed the monitoring/enumeration staff and checked their training records.
2.	Error in transferring the recorded data to ER sheet	Medium	The procedure for transferring the recorded break-up sheet readings to the spreadsheet is automated in nature, for the current Monitoring period the monitoring data is collected via taroworks which directly saves the data in the CSV file as confirmed during the interviews with Monitoring personnel and PD representatives thus increasing the chances of error are significantly minimised. Furthermore, CME has implemented internal QC procedures to ensure prevention of any such potential error in the prepared ER calculation sheet /15/.	The surveying and monitoring personnel assigned for PoA implementation has been trained and certified. The interviews conducted during on-site audit confirms the regular training as per the monitoring plan and implementation procedures to reduce the risk of oversight or data transfer. All the values in ER calculation sheet have been verified from supporting documents and survey data forms. None of the discrepancies was reported due to data collection and recording.
3.	Calculation Errors	Medium	The process is manual and therefore there is potential risk of errors / omissions/misstatements.	All calculations were checked by verification team concerning applicable requirements under various documents viz., methodology, PoA DD/9/ and VPA-DDs /10/.

C.2. Consideration of materiality in conducting the verification

Based on the review of ER sheet, it can be confirmed that the actual individual and aggregated material error is determined for the PoA as per GS requirements. The verification team has conducted a complete verification of all the information presented in the monitoring report and

data monitored as presented in the emission reduction calculation spread sheet /15/. There are no material errors, overestimation of ER, omission, or misstatement.

SECTION D. Means of verification

D.1. Desk/document review

The verification of the information of the PoA was performed through the document review including review of monitoring report /5/ Version 3.0 dated 03/10/2023. Additionally, cross checks were performed for information provided in the monitoring report using other source of information, the verification team's sectoral or local expertise and, if necessary, independent background investigations.

The desk review involves:

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

The list of documents reviewed during the verification is provided under appendix 3 of this report.

D.2. Remote audit

As per GS VVS v1.0 para 17.3.2 /2/| It is mandatory for the VVB to conduct a physical on-site inspection at verification for the design certified VPA if:

1. It is the first verification for the VVB with regard to this VPA;
2. More than three years have elapsed since the last on-site inspection conducted for verification for the VPA.
3. For the regular VPAs directly included by the CME following Fast track inclusion pathway, the VVB shall conduct the site visit within two years of a VPA's start date.

This is the third verification of the VPAs under assessment and a physical site visit was undertaken from 11/10/2022 to 13/10/2022 during the second monitoring period/33/, therefore remote audit was deemed appropriate as per GS VVS version 1.0 and available guidelines during the audit planning.

The assessment team conducted remote audit in line with the guidance established by para 6.5 and 6.6 of the GS remote audit requirements/41/. Video calls-based interviews over Microsoft teams platform were conducted with the PP representatives and heads of the institutions listed under section D.3, the geotagged photos and live site tours were conducted to confirm the installation and operation status of the devices. The calls were recorded, and the data is archived as VVB survey records in easily retrievable manner. Thus, the VVB confirms that sufficient means were employed to achieve the reasonable level of confidence during the remote audit.

No.	Activity performed during remote audit	Site location	Date	Team member
1.	Opening Meeting			
2.	Implementation and operation of project activity (project boundary, project technology) as per registered PDD			

3.	Management and monitoring procedures, data collection and archiving systems followed at project site	Kenya	22/06/2023	Anjali Chaudhary, Virginia Njeri
4.	Interview of CME representatives, VPA implementers, monitoring personnel and end-users (as per as sampling plan)			
5.	Management and operational system: Database management, allocation of responsibilities, qualification and training, WPS Distribution, Monitoring survey, internal audit and management review			
6.	Verification checklist: acceptability (or otherwise) of CME's monitoring survey records, compliance of monitoring procedures with registered PoA-DD and applied monitoring methodology.			
7.	Review of monitored data and relevant document in accordance with registered monitoring plan and applied monitoring methodology.			
8.	Review of ER calculations in accordance with applied methodology and relevant tools.			
9.	Closing meeting			

D.3. Interviews

D.3.1. Interviews with CME and VPA Implementers

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Turgesen	Mark	Impact Water, Kenya	22/06/2023	PoA Implementation, Operational and Management Framework, sampling surveys, end-users' feedback, etc.	Anjali Chaudhary and Virginia Njeri
2.	Huelsenbeck	Mark	Regional Director, Kenya	22/06/2023	Methodology application, monitoring plan, sampling method, ER calculations	Anjali Chaudhary and Virginia Njeri
3.	Lohia	Rohit	Climate Secure India Private Limited	22/06/2023	Methodology application, monitoring plan, sampling method, ER calculations	Anjali Chaudhary and Virginia Njeri
4.	Kumar	Ritesh	Climate Secure India Private Limited	22/06/2023	Methodology application, monitoring plan, sampling method, ER calculations	Anjali Chaudhary and Virginia Njeri

5.	Pathania	Rishabh	Climate Secure India Private Limited	22/06/2023	Methodology application, monitoring plan, sampling method, ER calculations	Anjali Chaudhary and Virginia Njeri
6.	Rariewa	Maureen	Country Director, Kenya	22/06/2023	Questions related institution document review	Anjali Chaudhary and Virginia Njeri
7.	Awino	Lucy	Monitoring personnel, Impact Water	22/06/2023	Monitoring system, training sessions, water quality test, hygiene campaign, etc.	Anjali Chaudhary and Virginia Njeri

Type of questions asked by VVB to VPA Implementers:

- Role and responsibilities of CME or VPA Implementers in the implementation of PoA
- Monitoring and implementation process of the PoA
- Frequency of training conducted for monitoring personnel.
- Water quality test process
- How institution received training related to operation of WPS unit?
- What is annual hygiene campaign and how it is recorded?
- Any grievance received during current monitoring period.

CME representatives and VPA Implementers explained the monitoring and operation of the PoA. In water hygiene campaign, CME team visits schools and conduct brief discussion about hand washing techniques. SMS campaign carried to all schools. Schools also celebrate water day and hygiene day under this campaign. Monitoring personnel interviewed during the remote audit described the monitoring system and how cleanliness and hygiene is maintained while installing WPS. Data collection procedure followed during monitoring consists of collecting details of school name, address, signature of school representative, unique product ID and other related to monitoring parameters. They talked about water quality test and training received for conducting water quality test and survey. All the details collected were found correct and inline to the monitoring plan described in the monitoring report /5/.

D.3.2. Interviews with end-users

No.	Interviewee		WPS technology	Date	Subject	Team member
	School name	Institution ID				
1.	Ayaro Primary School	K1830172	UltraTab	22/06/2023	VVB field survey	Anjali Chaudhary and Virginia Njeri
2.	St Matthew's Mixed Boarding Primary School	K1840767	UltraFlo	22/06/2023	VVB field survey	Anjali Chaudhary and Virginia Njeri
3.	P.C.E.A Thogoto Model Primary School	K1872230	UltraFlo	22/06/2023	VVB field survey	Anjali Chaudhary and Virginia Njeri
4.	Adugo Primary School	K1830495	UltraTab	22/06/2023	VVB field survey	Anjali Chaudhary and Virginia Njeri

5.	Adongo Junior School	K1826101	UltraTab	22/06/2023	VVB field survey	Anjali Chaudhary and Virginia Njeri
6.	A.C.K St.Stephen's Eshianza Primary School	K1818014	UltraTab	22/06/2023	VVB field survey	Anjali Chaudhary and Virginia Njeri
7.	Karoe Primary School	K1839978	UltraFlo	22/06/2023	VVB field survey	Anjali Chaudhary and Virginia Njeri
8.	Malinda primary school	K1824927	UltraTab	22/06/2023	VVB field survey	Anjali Chaudhary and Virginia Njeri
9.	St. Peter's Difathas Secondary School	K1825707	UltraFlo	22/06/2023	VVB field survey	Anjali Chaudhary and Virginia Njeri
10.	Bukananachi Friends Secondary School	K1824608	UltraTab	22/06/2023	VVB field survey	Anjali Chaudhary and Virginia Njeri
11.	St Joseph's kanguu secondary School	K1817396	UltraTab	22/06/2023	VVB field survey	Anjali Chaudhary and Virginia Njeri

Type of questions asked by VVB to end-user institutions:

No.	Questions asked to end-user institutions	Responses Received
1.	To confirm the name of the school, type of school, total population, name and designation of the respondents,	Details correctly provided
2.	Type of product received (UltraFlo or UltraTab) and its unique product ID	Details correctly provided
3.	Primary source of water in the institution and water purification methods	Details correctly provided
4.	Questions related to hygiene indicator covered in this PoA	Positive
5.	Benefits received from WPS unit installed in their institutions	Positive
6.	Training received from CME team and monitoring survey confirmation	Positive
7.	Confirmation of having grievance number for outreaching	Positive

The representatives of each of the institutions interviewed during the remote audit reported that they are happy with the installation of WPS system. They expressed positive feedback and listed benefits of using WPS which includes access to safe water and no incidence of water borne disease. They also reported that they are aware of the water quality test being conducted by the VPA Implementer and the grievance mechanism. No negative response was received during the interviews.

Further, the VVB didn't observe any discrepancy in the school population during the remotely conducted video interviews with the school representatives when compared with the CME's

survey results. The verified school population for the VVB remote audit samples has been specified under Appendix 5 of this report.

D.4. Sampling approach

CME's sampling approach

For the purpose of sampling, CME has followed the CDM guidelines for sampling and surveys for CDM project activities and programmes of activities version 9.0 /14/ which is in-line with the registered PoA-DD /9/. The CME has applied Stratified Random Sampling at PoA level for different monitoring parameters as per validated PoA DD /9/ and VPA-DDs /10/. 95/10 confidence precision was applied by CME in the sampling which is appropriate as per the single sampling covering 17 VPAs within the boundaries of PoA geographical location Kenya. Thus, PoA wide single sampling plan was used by the CME.

However, for current MP, PP has sought deviation and applied the sampling plan in line with applied "Emission reductions from Safe Drinking Water Supply" Version 1.0. Please refer section E.6. for details.

VVB's sampling plan:

The VVB applied a sampling approach to confirm the implementation of the VPA and compliance of monitoring plan against the registered documents /9/, /10/. The VVB has followed Standard for Sampling and surveys for CDM project activities and programmes of activities, version 9/13/, and applied acceptance sampling in the verification in accordance with para 28. Para 30 and 31 of standard suggests the AQL and UQL and maximum errors which have been followed by the VVB. The table 2 of Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 9/13/, prescribes minimum sample size and acceptance number for discrepant values. Applying para 30 and 31 of the standard, verification will require 11 samples to verify the CME's sampling plan /15/.

The current verification is for VPA ID: GS11289, GS11290, GS11291, GS11292, GS11293, GS11294, GS11295, GS11296, GS11297, GS11298, GS11299, GS11300, GS11301, GS11302, GS11303, GS11304, GS11305. The CME has applied across VPA sampling. The VVB has also apply across VPA sampling.

The verification team has selected the sample size as 11 institutions with 4 institutions extra as backup for the purpose of remote inspection to check the acceptability of CME's sampling results or otherwise. VVB has taken 2 back up number for each of the technology due to high chances of unavailability of the school representatives on calls.

Sample size: per region

VPA Ref no.	AQL	UQL	Producer risk	Consumer risk	Sample size; min	Acceptance no.
GS11289, GS11290, GS11291, GS11292, GS11293, GS11294, GS11295, GS11296, GS11297, GS11298, GS11299, GS11300, GS11301, GS11302, GS11303, GS11304, GS11305	0.5%	20%	10%	10%	11	0

These 11 systems are divided as per the distribution ratio of different kinds of units:

WPS Unit type	Distribution number	VVB samples
Ultra-Flo	2,588	4
Ultra-Tab	7,383	7

The verification team selected the random samples of CME's sampled records to check the acceptability (or otherwise) of the data for each such record with CME's sample records and determine if the CME's sample records meet the requirements. All the 11 main institutions (4 samples from Ultra Flo and 7 samples from Ultra Tab) sampled for the remote audit. During the remotely conducted interviews with end-users, all the details were found correct and no discrepancies were observed in the monitoring data.

VVB confirmed that the required confidence level has been met for the sampled data and that the samples were randomly selected and are representative of the entire population. Prior to the remote audit, VVB applied randomizer in the monitoring data and generate the random numbers for the required 11 samples (4 of Ultra-Flo WPS unit type and 7 Ultra-tab WPS unit type). The samples were randomly picked-up to ensure that the selected samples were representative of the entire population. In addition, 4 extra samples were taken from the randomized dataset to propose backup samples.

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

Area of verification findings	No. of CL	No. of CAR	No. of FAR
General	-	-	-
Compliance of the monitoring report with the GS4GG monitoring report form	-	-	-
Remaining forward action requests from validation and/or previous verifications	-	-	-
VPAs considered for verification and covered under this report	-	-	-
Programme of activities	-	-	-
Compliance of the programme implementation with the registered PoA-DD	-	-	-
Implementation and operation of the management system	-		
VPA Implementation			
Compliance of the VPA implementation with the included VPA design document	-	-	-
Post-design certification changes	-	-	FAR 03*
Compliance of the monitoring activities with the registered monitoring plan	-	-	-
Data and parameters fixed ex ante or at renewal of crediting period	-	-	-
Data and parameters monitored	-	-	FAR 01
Comparison of monitored parameters with last monitoring period	CL 01	-	-
Implementation of the sampling plan	-	-	-
Assessment of data and calculations of net emission reductions or removals	-	-	-
Calculations of baseline value of each SDG Impact	-	-	-
Calculations of project value of each SDG Impact	-	-	-
Calculations of leakage GHG emissions	-	-	-
Calculations of net benefits for each SDG Impact	-	-	-
Comparison of actual GHG ER value achieved during this monitoring period with estimated value	-	-	-
Safeguarding principles	-	-	-
Stakeholder Inputs and Legal Disputes	-	-	-
Continuous input and grievance mechanism	-	-	-
Internal quality control	-	-	-
Verification opinion	-	-	-

Others* (raised by GS4GG during performance review during MP02)			FAR 01* FAR 02*
Total	01	00	04

SECTION E. Verification findings

E.1. General

E.1.1 Compliance of the monitoring report with the GS4GG monitoring report form

Means of verification	The monitoring report form used is GS4GG Monitoring report template version 1.1 /6/, which is a valid version available at the time of verification. All the sections of the aforesaid form were filled as per the Monitoring report template guide version 1.1 /7/ and all the relevant details were provided in the form.
Findings	No findings were raised
Conclusion	The monitoring report version 3.0 /5/ has been found to be completed using the valid version of the monitoring report form. The information provided in the monitoring report has been assessed in accordance with the GS4GG principles & requirements version 1.2/1/ and monitoring report template guide /7/.

E.1.2 Remaining forward action requests from validation and/or previous verifications

FAR 01 and FAR 02 raised by GS4GG performance review for MP 02 /38/, were addressed during the current assessment period. For details, please refer Appendix 4 for this report.

E.1.3 VPAs considered for verification and covered under this report

Title and GS reference number of the VPA included in the PoA as of the end of this monitoring period	Is the VPA considered for this verification? (yes/no)	The date when the VPA was included	Version of the PoA-DD
GS11289: Improved Cookstove and Safe Water Programme – Kenya – VPA 31.	Yes	11/08/2022	6.0
GS11290: Improved Cookstove and Safe Water Programme – Kenya – VPA 32.	Yes	11/08/2022	6.0
GS11291: Improved Cookstove and Safe Water Programme – Kenya – VPA 33.	Yes	11/08/2022	6.0
GS11292: Improved Cookstove and Safe Water Programme – Kenya – VPA 34.	Yes	11/08/2022	6.0
GS11293: Improved Cookstove and Safe Water Programme – Kenya – VPA 35.	Yes	11/08/2022	6.0
GS11294: Improved Cookstove and Safe Water Programme – Kenya – VPA 36.	Yes	11/08/2022	6.0
GS11295: Improved Cookstove and Safe Water Programme – Kenya – VPA 37.	Yes	11/08/2022	6.0
GS11296: Improved Cookstove and Safe Water Programme – Kenya – VPA 38.	Yes	11/08/2022	6.0
GS11297: Improved Cookstove and Safe Water Programme – Kenya – VPA 39.	Yes	11/08/2022	6.0
GS11298: Improved Cookstove and Safe Water Programme – Kenya – VPA 40.	Yes	11/08/2022	6.0
GS11299: Improved Cookstove and Safe Water Programme – Kenya – VPA 41.	Yes	11/08/2022	6.0

GS11300: Improved Cookstove and Safe Water Programme – Kenya – VPA 42.	Yes	11/08/2022	6.0
GS11301: Improved Cookstove and Safe Water Programme – Kenya – VPA 43.	Yes	11/08/2022	6.0
GS11302: Improved Cookstove and Safe Water Programme – Kenya – VPA 44.	Yes	11/08/2022	6.0
GS11303: Improved Cookstove and Safe Water Programme – Kenya – VPA 45.	Yes	11/08/2022	6.0
GS11304: Improved Cookstove and Safe Water Programme – Kenya – VPA 46.	Yes	11/08/2022	6.0
GS11305: Improved Cookstove and Safe Water Programme – Kenya – VPA 47.	Yes	11/08/2022	6.0

E.2. Programme of activities

E.2.1 Compliance of the programme implementation with the registered PoA-DD

Means of verification	The purpose of the PoA “Improved Cookstove and Safe Water Programme” is the dissemination of improved cook stoves (ICS) and low GHG water purification technologies (WPS) to households, communities, and institutions in Nigeria and Kenya. The VPAs (GS11289 to GS 11305) under this PoA provide safe and clean drinking water through dissemination of low GHG water purification technologies (WPS) to schools in Kenya.											
	The monitoring period covered under this verification is 01/07/2022–31/12/2022 (Inclusive of both days). The implementation of the PoA has led to reduction of the GHG emissions caused due to usage of non-renewable biomass/ fossil fuel for boiling water. It has also helped to reduce the incidence of waterborne and IAP caused illness and provided clean water to schools. The baseline study showed that the piped water can only be accessed by 36.8% of the total population of Kenya. /16/ Therefore, installation of WPS under the current PoA has provided access to safe water to larger population in schools of Kenya. All the VPAs selected under PoA are within the boundaries of PoA location i.e., Kenya. The VPAs covered by the PoA under this monitoring period are VPA 31 to VPA 47 corresponding to its GSID GS11289 to GS11305.											
	The PoA meets the eligibility criteria of the Gold Standard and applies applicable methodology for quantification of GHG emission reductions. The latest and valid version of the methodology Emission reduction from Safe Drinking Water Supply, version 1.0 /8/. The CME for the PoA is Impact Carbon LLC, which distributed the WPS technologies by actively engaging with the local partners. The VPA Implementer is Impact Water LLC who is responsible for operating VPAs as per CME management system and conduct monitoring and verification.											
	The aforesaid VPAs involve dissemination of two types of water purification systems: I. Chlorination (UltraFLO/UltraTab)											
	The technical specifications of the WPS distributed under the VPAs is provided in the table below: <table><tr><td>Description</td><td>UltraFLO</td><td>UltraTab</td></tr><tr><td>Application</td><td>Piped water</td><td>Un-piped water</td></tr><tr><td>Flow rate</td><td>20L/min</td><td>1 tablet treats 100 L</td></tr><tr><td>Capacity/lifespan</td><td>Expiry: 5 years FLO:340,000 L Inline:720,000 L</td><td>Expiry: 5 years Capacity: Big pack: 48,000 ltrs</td></tr></table>	Description	UltraFLO	UltraTab	Application	Piped water	Un-piped water	Flow rate	20L/min	1 tablet treats 100 L	Capacity/lifespan	Expiry: 5 years FLO:340,000 L Inline:720,000 L
Description	UltraFLO	UltraTab										
Application	Piped water	Un-piped water										
Flow rate	20L/min	1 tablet treats 100 L										
Capacity/lifespan	Expiry: 5 years FLO:340,000 L Inline:720,000 L	Expiry: 5 years Capacity: Big pack: 48,000 ltrs										

		Small pack: 10,000 ltrs
Fixed or Portable	Fixed	Portable
Removal of E. Coli	99 (2-log)	99 (2-log)

All the deployed systems meet the eligibility requirements of the PoA DD /9/. The details of the systems were verified from the manufacturer's specification /18/ provided by the CME.

During the remote audit, the installation of WPS claimed by the CME were checked and found to be in-line with the technical description provided in the registered PoA-DD/9/ and monitoring report/5/.

The Verification team assessed the following information to verify the capacity and lifetime of systems under the VPAs:

1. Technical specification including capacity/ expiry of UltraFLO issued by Medentech (technology supplier). ULTRAFLO (inline) variant with increased capacity is introduced during current MP, however this is not lead to alteration to the applied technology or deviation from the technology permissible under the PoA, therefore the introduction of new variant of ULTRAFLO device with higher water purification capacity and is not perceived as a change to design by the VVB.
2. Technical specification including capacity/ expiry of UltraTAB issued by Medentech (technology supplier).
3. The UltraTAB strip clearly mentions the treatment capacity of 1 tablet as 100ltrs and a Small Pack UltraTAB pack is standardized at 10 strips of 10 tablets each, rendering the capacity of Small Pack UltraTAB pack as 10,000 ltrs and Big pack: 48,000 ltrs as verified through photographs and confirmed through interviews with the end-users.
4. UltraFLO cartridges are manufactured in a standardized size as per the dimensions specified in the VPA-DDs and MR (confirmed during the remote audit and through UltraFLO dimension declaration by CME) and pertains to the specifications issued by Medentech.
5. The expiry of the UltraFlo/ UltraTAB was also found mentioned on the UltraFLO cartridge / UltraTAB pack respectively as 5 years (photographs of UltraFlo and UltraTAB units).
6. The WPS installed by the CME were checked by the verification team during the remote audit and found to be in-line with the technical description provided in the registered PoA-DD/9/ and Monitoring report/5/ and manufacturer's specifications /18/.

Also, the verification team checked the implementation status of the project activity through remote interviews with the CME, the VPA implementer, monitoring personnel and WPS User as defined in the PoA DD/9/, and monitoring report /5/.

Interviews of the monitoring personnel involved in the QA/QC procedures revealed that the procedures mentioned in the PoA DD/9/ are being followed and the training records/20/ regarding the trained personnel were checked.

The project location and coordinates were verified during remote audit and found to be in-line with the registered PoA-DD/9/ and MR/5/.

Further, based on the review of sales database (presented in ER sheet)/15/, remote audit observations and interviews, the verification team found that:

- The VPA(s) were implemented within the boundary of the PoA as described in the revised accepted PoA-DD/9/.
- The CME is same as that mentioned in the revised accepted PoA-DD/9/
- The implementation and operation of the project activity have been conducted in accordance with the description contained in the revised accepted PoA-DD/9/ and included VPA-DDs/10/.
- All physical features of the VPA proposed in the included VPA-DDs/10/ were in place.
- The project participants/VPA implementer has operated the VPAs as per the included VPA DDs/10/.

A remote audit was conducted by the verification team; 11 WPS were surveyed. The uniqueness of the system is identified from UID written on the units.

The information of the installed WPS was also verified from the installation database/28/ which was cross checked for 11 WPS samples with their corresponding purchase orders/29/.

The emission reductions being claimed during this monitoring period are lesser than the estimated emission reductions demonstrated in the VPA-DDs/10/, as given in the table under section E.8. for comparing ex-ante estimated ERs in the VPA DDs/10/ for the corresponding period with the actual ERs achieved.

The VPAs are within the threshold limits of the applied methodology/8/.

The monitoring report was compared and verified against the description provided in the revised accepted PoA-DD/9/ and found to be correct.

The technical description of the project activity has been verified by assessing the description reported in the monitoring report against the applied methodology /8/ and cross-checked during remote audit through the interviews. All the information was correctly mentioned in the monitoring report and its corresponding ER calculation sheet /5,15/.

The summary of the implemented PoA and the technology involved are described in the PoA-DD /9/ with sufficient details and clarity. The accuracy of the PoA description was determined based on the remote audit interviews with the CME representatives and project personnel as part of verification audit, review of supporting documents (as listed in Appendix 3), and interviews with the end-users. The specification of the installed technologies under each VPA is cross-checked from the manufacturer's specifications at the VPA level/18/. The assessment team has checked and reviewed the monitoring report with supportive evidence and found the details to be correct.

The crediting period is 01/01/2021 to 31/12/2025 which is a total of 5 years. The monitoring period for this verification is 01/07/2022 to 31/12/2022 (inclusive of both days).

Achieved emission reductions are 362,022 tCO₂e for the current MP 01/07/2022– 31/12/2022 (inclusive of both days). The emission reduction calculation sheet was reviewed/15/. CME has applied correct formulae and

	calculated emission reductions in accordance with the applied methodology/8/. VVB has also checked the project details such as title of the project, project location, technology applied, and VPAs in project portals of carbon standard CDM, VCS, GCC, GS and through random google search. The PoA was previously registered as PoA 9948 with a different PoA title under CDM which has been transparently transitioned to GS 11189 through GS approval process.
Findings	None
Conclusion	Based on the review of the monitoring report, PoA-DD, VPA-DD, installation database and interviews conducted with the CME representatives, VPA Implementer and end-users, the verification team found that: a) The VPAs are implemented within the boundaries of the PoA i.e., Kenya as described in the PoA-DD b) CME for the PoA is Impact Carbon and VPA Implementer is Impact Water c) The distribution and operation of the PoA has been done in accordance with the description reported in the PoA-DD and included VPA-DDs. d) The monitoring and implementation process is in line to the VPA-DDs, which is further explained under section E.4 of this verification report. e) The crediting period of the PoA is of 5 years starting form 01/01/2021 to 31/12/2025. The monitoring period covered under this verification assessment is 01/07/2022 to 31/12/2022 (inclusive of both days). f) Achieved ERs are lower than the estimated ERs for all the VPAs

E.2.2 Implementation and operation of the management system

Means of verification	The monitoring plan, as explained in section C of the monitoring report, has been found in compliance with the requirements of the applied methodology /8/. The roles & responsibility of both CME & VPA implementers are well defined. CME's role is primarily with the documentation at both PoA & VPA level, training of the Implementers confirmed during the physical interviews with the CME's team. The documentation and record maintenance for each VPA under the PoA is performed by Program Manager. CME is responsible for outreaching, training, and ensuring proper addressal of concerns or grievances made by the end-users related to WPS technology being installed at their institutions. Each VPA implementer collected and reported the required data as much as possible to effectively monitor the emission reductions of each VPA in accordance with the monitoring plan in the VPA-DDs. Training records is being maintained by the Program Manager and is also responsible for managing electronic database containing list of units installed/ distributed along with the required end user/ baseline information complied by customer engagement staff. The database of total sales records for each of the distributed WPS (UltraFlo/ UltraTab) is maintained electronically along with the paper records and/or SMS tracking records. The total sales record consists of following information: a. Type of system (UltraFLO / UltraTAB) b. Unique serial number of the units installed / distributed
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	c. Date of installation / distribution d. Address and details of school and contact detail (if available) of representative e. Type of School (Boarding / Non-boarding) f. Number of project technology installed/distributed in an institution g. School population count (number of students / staff in boarding / non-boarding category) The verification team confirmed that the distributed WPS units have Unique product ID as confirmed during the remote audit surveys. This was found consistent with the information given in the installation database /15/ and it was ensured that double counting is avoided. The management system maintained by the CME is in place with the PoA DD /9/.
Findings	No findings were raised.
Conclusion	The verification team assessed the management systems in place to implement the monitoring of the PoA. This included the roles and responsibilities, data collection, transfer and aggregation procedures, data storage and archiving for the monitoring system, training records /19,20/ as reported in the monitoring report. The verification team confirms that the monitoring management system of the PoA is in place with the responsibilities properly identified and established.

E.3. VPA Implementation

E.3.1. Compliance of the VPA implementation with the included VPA design document

Means of verification	The registered VPAs (GS11289 to GS 11305) under the PoA aims to provide safe drinking water to the institutions in Kenya. The PoA is primarily designed to replace the existing fossil fuel / non-renewable woody biomass-based means of purifying water by installing low emission / emission free Water purification systems to provide safe drinking water. Impact Water is the implementer of the VPAs and has fully implemented the VPAs with the help of Sales and Distribution Partners (SDP). The same has been verified from the agreement between the CME and VPA Implementer /35/. This monitoring report includes the implementation and monitoring of 17 VPAs- VPA GS 11289- GS 11305 in Kenya. The type of systems installed under the VPA are as follows:				
	Type of installed technology (Service level)	Technology / operating concept	Technology	Implementation level (Cumulative Number of units installed)	Means of Verification
	Institution/School	Chlorination: This uses activated chlorine to kill pathogens in water	UltraFlo	2,588	The total number of UltraFlo distributed by the end of the monitoring period is 2,588 which is verified from the installation database provided in the ER sheet /15/.

			UltraTab	7,383	The total number of UltraTab distributed by the end of the monitoring period is 7,383 which is verified from the installation database provided in the ER sheet /15/.
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The specification of water purification technology:

WPS Models	Lifetime	Fixed or Portable	Removal of E. coli	Minimum Watt / Voltage	MoV
UltraFLO	Expiry: 5 years Capacity (FLO): 340,000 ltrs Capacity (Inline): 720,000 ltrs	Fixed	99 (2-log)	Not applicable	Technical specifications of the UltraFlo system were verified through the details provided in the manufacturer's specifications /18/ and were found to be consistent with the information given in monitoring report /5/.
UltraTAB	Expiry: 5 years Capacity: Big pack: 48,000 ltrs Small pack: 10,000 ltrs	Portable	99 (2-log)	Not applicable	Technical specifications of the UltraTAB system were verified through the details provided in the manufacturer's specifications /18/ and were found to be consistent with the information given in monitoring report /5/.

The table below provides details on VPA and technology specific figures for this monitoring period:

VPA no.	First WPS Installation date	Crediting period	No. of units (installed)		Estimated ERs	ERs achieved
			FLO	TAB		
GS11289	14/03/2018	01/01/2021-31/12/2025	296	352	27,852	18,717
GS11290	28/01/2019	01/01/2021-31/12/2025	141	506	27,852	22,592
GS11291	10/04/2019	01/01/2021-31/12/2025	148	496	27,852	24,143

GS11292	17/05/2019	01/01/2021-31/12/2025	140	506	27,852	25,380
GS11293	19/06/2019	01/01/2021-31/12/2025	134	500	27,852	23,403
GS11294	06/07/2019	01/01/2021-31/12/2025	165	443	27,852	23,828
GS11295	09/08/2019	01/01/2021-31/12/2025	87	552	27,852	25,475
GS11296	11/09/2019	01/01/2021-31/12/2025	97	544	27,852	25,438
GS11297	02/10/2019	01/01/2021-31/12/2025	75	531	27,852	25,713
GS11298	23/10/2019	01/01/2021-31/12/2025	97	505	27,852	23,582
GS11299	28/10/2019	01/01/2021-31/12/2025	15	511	27,852	25,780
GS11300	06/01/2020	01/01/2021-31/12/2025	201	436	27,852	22,495
GS11301	21/01/2020	01/01/2021-31/12/2025	366	278	27,852	17,278
GS11302	31/01/2020	01/01/2021-31/12/2025	288	353	27,852	20,362
GS11303	12/02/2020	01/01/2021-31/12/2025	205	433	27,852	21,397
GS11304	07/11/2019	01/01/2021-31/12/2025	98	263	27,852	8,888
GS11305	28/04/2018	01/01/2021-31/12/2025	35	174	27,852	7,551
Total			2588	7383	473,484	362,022
	As checked from the delivery notes/31/	Checked from the GS website	Check- ed from sales data base/28/	Check- ed from sales data base/28/	Checked from the ER sheet/15/	Checked from the ER sheet/15/

The start date of crediting period, inclusion dates of the VPAs were checked from the GS VPA DDs /10/. The First WPS Installation dates were checked from the salesforce records/30/.

The implementation of the VPA as mentioned above is within the geographical boundary of PoA-DD /9/, which has been verified through review of lat-long data /27/, discussed already in Section E.2.1 above. Impact Carbon is the CME of the VPA, and Impact Water is the VPA Implementer /5/.

In case of UltraFLO, it shall be noted that water is transported from primary water sources such as wells, surface water and boreholes through pipes to drinking water storage tanks in project schools. The Ultra-FLO systems are installed on these pipes which was found to be in-line to requirement set in the VPA-DDs/10/.

In the absence of a pipeline connection to the drinking water storage tanks, UltraTABs are provided to the schools, which are designed for non-piped applications. An UltraTAB pack consists of 10 strips of 10 tablets each (or 48 tablets in each trip for big pack), wherein the tablets can be directly put in drinking water storage tank (@one tablet per 100L of water), thus, is feasible for un-piped applications.

During the remote audit conducted for the current issuance request, it was clearly noted by the verification team that UltraFLO systems have only been installed on pipeline

	connections, even when the primary water source is different from City Council / Government / Municipal water connection. Similarly, UltraTABs are administered only in un-piped applications even when the schools may have a piped connection (not connected to drinking water storage tank). Thus, all the systems have been implemented in line with the VPA DDs/10/. The implementation of the VPAs, as defined in the monitoring report, were assessed through document reviews and remote audit survey. The VPAs covered in this PoA is within the geographical boundary of the PoA, which constitutes physical boundary as well. The water purification system (WPS) deployed under PoA is verified as follows. The verification team during the current verification has carried out remote audit and interviews with the CME/ VPA Implementers to understand and verify the VPA implementation and deviations in the monitoring, if any. It was observed that each school has unique Institution Salesforce ID, each WPS unit distributed was assigned a unique product ID, which ensured that there is no double counting for the technologies distributed in the VPA. The unique product ID on each unit, personal information of unit owners and installation date and supply dates of unit was cross checked with the installation database and monitoring samples data provided in ER calculation sheet /15/ and audit sample data. The operation of the technology was confirmed through physical interviews of the sampled institutions' representatives during the remote audit.
Findings	None
Conclusion	a) The verification team is of the opinion that physical features of the VPA have been implemented in accordance with the VPA-DDs /10/. b) No specific monitoring equipment had to be installed according to the monitoring plan. c) It is also confirmed, through and review of the supporting documentation that physical features of the component VPA have been implemented in accordance with the VPA-DDs /10/. d) The VPA was also found to be completely operational in line with the VPA-DDs /10/. However, CME has sought a temporary deviation during the current MP for the systems that were fully consumed/ discontinued prior to the start of the current monitoring period. e) The information provided in the relevant sections of the monitoring report appropriately describes the implementation and operational status of the PoA.

E.4. Post-design certification changes

E.4.1. Temporary deviations from the approved Monitoring & Reporting Plan, methodology or standardized baseline

PD has sought deviation for the monitoring methodology (Dev 184) dated 07/12/2021. This has been included in B.2.1 section in the MR. The proposed deviation was related to conduct the project surveys for WPS stratifying each technology irrespective of their age, and by grouping more than 10 small scale VPAs together. As per the justification, the VPAs included in this PoA in each country are identical and as follow same management plan, operational plan and technologies. This deviation was approved by GS, for the first crediting period of the VPAs GS11259 to GS11305, however put forward following two conditions:

FAR 01

1. The stratified random sampling approach applied for sample size calculation for the monitoring survey must meet all the requirements under Appendix 3 of Guideline: Sampling and surveys for CDM project activities and programmes of activities.
2. Continuity in the project's monitoring activities is maintained, and PD can justify that no monitoring gaps exist (especially for SDG parameters) within the Monitoring Period(s). However, if gap(s) exist, the project shall justify that conservative approach(es) have been applied in line with section 3 of the Deviation Approval Requirements and Procedures (version 1.1) and overarching GS principles (as applicable).

FAR 02

The PD shall ensure that no systemic bias exists in the usage of chlorine tablets which might be leading to an overestimation of emission reduction. If a bias is identified, the PD must apply a conservative approach and shall also propose a revision to the monitoring plan to ensure a continuous supply of UltraTAB. The verifying VVB (through the end-user database and onsite verification) ensure that the PD meets the mentioned requirement and is following a conservative approach.

These FARs have been addressed as FAR 03 under Appendix 4 of this report.

E.4.2. Corrections

Not Applicable

E.4.3. Changes to start date of crediting period

Not Applicable

E.4.4. Permanent changes from the Design Certified monitoring plan, applied methodology or applied standardized baseline

Not Applicable

E.4.5. Changes to project design of approved project

Not Applicable

E.5. Compliance of the monitoring activities with the registered monitoring plan

Means of verification	The monitoring plan as contained in monitoring report /5/ were reviewed against the monitoring requirements of the applied methodology /8/ as well as PoA-DD and VPA-DDs /9,10/ with reference to the technology involved. Based on this review, it was found that the monitoring plan includes all the required parameters to be monitored in the context of the VPA design and description and allows proper determination of emission reductions in accordance with PoA-DD /9/ and applied
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	methodology Emission reductions from Safe Drinking Water Supply, version 1.0/8/.
Findings	No findings were raised
Conclusion	The monitoring plan is in line with the approved methodology Emission reductions from Safe Drinking Water Supply, version 1.0/8/, that is included in the PoA-DD and VPA-DDs /9,10/.

E.5.1. Data and parameters fixed ex ante or at renewal of crediting period

ABS_{Baseline} Access to Basic Services (number of premises with at least one WPS distributed / installed under the baseline)

SDG Indicator	1
Means of verification	The parameter represents number of premises with at least one WPS distributed / installed under the baseline. VPAs aim at distributing WPS to the institutions of Kenya thereby replacing the baseline method of boiling of water for consumption. Thus, CME assumes the parameter value to be zero as none of the institutes were having WPS in the baseline scenario. The value of the parameter is sourced from the VPA DDs/10/. Moreover, none of the end users replied to be using an improved technology before the receiving the project water purification system.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the PoA-DD /9/ and VPA-DDs /10/. The value applied is correct and justified.

IH_{Baseline} Good Health and Well Being

SDG Indicator	3
Means of verification	The parameter referred to % Of users reporting reduction in incidence of diarrhoea and water borne diseases etc. in baseline (improved health). CME assumes the parameter value to be zero as none of the institutes were having WPS in the baseline scenario. The value of the parameter is sourced from the VPA DDs/10/. Moreover, none of the end users replied to be using an improved technology before the receiving the project water purification system.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the PoA-DD /9/ and VPA-DDs /10/. The value applied is correct and justified.

SWQ_{Baseline} Clean Water and sanitation

SDG Indicator	6
Means of verification	The PoA distributed WPS to the institutions of Kenya thereby replacing the baseline method of boiling of water for consumptions. The parameter refers to % Users reporting safe water quality in baseline. Thus, CME sources the parameter value as 4.44% as per the response of the institutes which report using safe water in the baseline scenario. The value of the parameter is sourced from the VPA DDs/10/ and recorded in the baseline survey.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the PoA-DD /9/ and VPA-DDs /10/. The value applied is correct and justified.

AAC_{Baseline} Affordable and Clean Energy

SDG Indicator	7
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Means of verification	The PoA distributed WPS to the institutions of Kenya thereby replacing the baseline method of boiling of water for consumptions. The parameter refers to access to affordable and clean energy (% of operating WPS units under baseline). Thus, CME assumes the parameter value to be zero as none of the institutes were having WPS in the baseline scenario. The value of the parameter is sourced from the VPA DDs/10/. Moreover, none of the end users replied to be using an improved technology before the receiving the project water purification system.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the PoA-DD /9/ and VPA-DDs /10/. The value applied is correct and justified.

QE IG_{Baseline} Decent Work and Economic Growth

SDG Indicator	8
Means of verification	The PoA distributed WPS to the institutions of Kenya thereby replacing the baseline method of boiling of water for consumptions. The parameter refers to Quantitative Employment and income generation (Number of person (male and female) hired under Baseline). Thus, CME assumes the parameter value to be zero as none of the institutes were having WPS in the baseline scenario. The value of the parameter is sourced from the VPA DDs/10/. Moreover, none of the end users replied to be using an improved technology before the receiving the project water purification system.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the PoA-DD /9/ and VPA-DDs /10/. The value applied is correct and justified.

Project technological description, the detailed description of the planned project technology

SDG Indicator	13		
Means of verification	The value for this parameter has been verified from the Manufacturer's specifications /18/.		
	Description	UltraFLO	Ultra TAB
	Manufacturer	Medentech	Medentech
	Product Name	UltraFLO UltraFLO (Inline)	Big Pack, Small Pack
	Technology type	Chlorination	Chlorination
	Performance classification	Complies with National standard	Complies with National standard
	The manufacturer's specifications /18/ shared by the CME has been reviewed and it was found that project technological description is correctly reported in monitoring report /5/.		
Findings	No findings were raised.		
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the PoA-DD /9/ and VPA-DDs /10/. The value applied is correct and justified.		

Regulatory framework for safe water supply, National, sub-national and local regulations or guidance for safe drinking water supply, operation and maintenance, including any tariff requirements in host country Kenya

SDG Indicator	13
Means of verification	The project does not undermine or conflict with any national, sub-national and local regulations or guidance for safe drinking water supply,

	operation and maintenance, including any tariff requirements. Further, the national standards and local regulations for safe drinking water supply do not impose any cap on parameters used by the methodology and therefore have no implications on emission reduction calculations. The VPAs are in line with all the local and national Safe Water guidelines.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the PoA-DD /9/ and VPA-DDs /10/. The value applied is correct and justified.

Water resources in the project boundary, Improved and Unimproved drinking water sources in Kenya

SDG Indicator Means of verification	13		
	Baseline survey of Schools		
	S.No	Drinking water source	School/ Institutions (%)
	1.	Government/ Private piped connection	22.78
	2.	Surface water	10.56
	3.	Well, /Borehole	42.22
	4.	Rainwater	20.00
	5.	Trucked Water	3.33
	6.	Others	1.11
	The value for this parameter is different for improved and unimproved drinking water sources in Kenya. The value is sourced form baseline survey sheet /23/.		
PD has taken following values for other water sources as per annex 2 of the applied methodology.			
S. No	Source of drinking water	% Premises	
1.	Improved sources	88.33	
2.	Unimproved Sources	11.67	
Findings	No findings were raised.		
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the VPA-DD /10/. The value applied is correct and justified.		

Stove technologies used in the project boundary; The proportion of different stove types used in premises in the geographical area of the project. If the project covers different types of end-user's premises (e.g. households, institutions), then the stoves technologies should be determined for each premises type.

SDG Indicator	13		
Means of verification	Baseline survey of Schools		
	S.no	Stove Technology	School/Institutions (%)
	1	Traditional / 3 Stone Fire	98.84
	2	Traditional Charcoal Pot	1.16
	Stove technologies used in the project boundary was found to be traditional 3 stone fire stoves or charcoal pots. The values are used to calculate baseline emission. The value is sourced from baseline survey sheet /23/.		
Findings	No findings were raised.		
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the VPA-DD /10/. The value applied is correct and justified.		

Expected technical life of project technology, The expected technical life of an individual project technology shall be defined in the PDD. The details include both technology/device life and filter life, if a filter is used and it is replaceable.

SDG Indicator	13		
Means of verification	The expected technical life of the project technology is in accordance with the manufacturer's specifications /18/ and has been correctly reported in monitoring report /5/.		
	Description	UltraFLO	UltraTAB
	Treatment Volume (Ltrs)	FLO:340,000 Inline:720,000	Big Pack: 48,000 Small Pack: 10,000
	Life Span / Expiry-filter	5 years	5 years
	Life Span / Expiry - system	20 years	20 years
Findings	No findings were raised.		
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the VPA-DD /10/. The value applied is correct and justified.		

X_f, The proportion of each different cooking fuel f used in the project boundary by end-users:

by end user

SDG Indicator	13									
Means of verification	The fuel used in the project location are wood fuel, charcoal and kerosene. The values are used to calculate baseline emission. The value is sourced from baseline survey sheet /23/. <table><tr><th>S.no</th><th>Baseline Fuel Usage</th><th>School/Institutions (%)</th></tr><tr><td>1.</td><td>Woodfuel</td><td>98.84</td></tr><tr><td>2.</td><td>Charcoal</td><td>1.16</td></tr></table>	S.no	Baseline Fuel Usage	School/Institutions (%)	1.	Woodfuel	98.84	2.	Charcoal	1.16
S.no	Baseline Fuel Usage	School/Institutions (%)								
1.	Woodfuel	98.84								
2.	Charcoal	1.16								
Findings	No findings were raised.									
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the VPA-DD /10/. The value applied is correct and justified.									

EF_{b, f, CO2}, CO2 emission factor from use of fuels

SDG Indicator	13
Means of verification	Following are the values applied under this parameter Wood = 112 tCO₂/TJ Charcoal = 165.22 tCO₂/TJ (includes charcoal production emissions) The value for this parameter is sourced from IPCC default value for wood and charcoal: IPCC 2006 Guidelines for National Greenhouse gas inventories /24/.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the VPA-DD /10/. The value applied is correct and justified.

EF_{b, f, nonCO2}, Non-CO₂ emission factor from use of fuels, in case the baseline fuel is biomass or charcoal

SDG Indicator	13
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Means of verification	Following are the values applied under this parameter AR5 GWP - Wood: 9.46 tCO₂e/TJ - Charcoal: 44.83 tCO₂e/TJ (includes production emissions of CH₄ and N₂O) The value for this parameter is sourced from IPCC default value for wood and charcoal: IPCC 2006 Guidelines for National Greenhouse gas inventories /24/.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the PoA-DD /9/ and VPA-DDs /10/. The value applied is correct and justified.

η_{wb} , Weighted average efficiency of the baseline water boiling devices.

13										
SDG Indicator Means of verification	The parameter calculates the weighted average of the baseline water boiling devices.									
	Stove technology usage									
	<table><tr><td>S.no</td><td>Stove Technology</td><td>School/Institutions (%)</td></tr><tr><td>1</td><td>Traditional / 3 Stone Fire</td><td>98.84</td></tr><tr><td>2</td><td>Traditional Charcoal Pot</td><td>1.16</td></tr></table>	S.no	Stove Technology	School/Institutions (%)	1	Traditional / 3 Stone Fire	98.84	2	Traditional Charcoal Pot	1.16
	S.no	Stove Technology	School/Institutions (%)							
	1	Traditional / 3 Stone Fire	98.84							
	2	Traditional Charcoal Pot	1.16							
Stove efficiency										
<table><tr><td>S.no</td><td>Stove Technology</td><td>% Efficiency</td></tr><tr><td>1</td><td>Traditional / 3 Stone Fire</td><td>10</td></tr><tr><td>2</td><td>Traditional Charcoal Pot</td><td>20</td></tr></table>	S.no	Stove Technology	% Efficiency	1	Traditional / 3 Stone Fire	10	2	Traditional Charcoal Pot	20	
S.no	Stove Technology	% Efficiency								
1	Traditional / 3 Stone Fire	10								
2	Traditional Charcoal Pot	20								
The value 10.12% used for calculation has been sourced from baseline survey data /23/ and as per the applied methodology.										
Findings	No findings were raised.									
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the VPA-DD /10/. The value applied is correct and justified.									

C_b , Proportion of project end-users who in the baseline were already using safe water, either from an improved water source, or from a water treatment method other than boiling.

SDG Indicator	13
Means of verification	The value 4.44% applied in this parameter is the proportion of project end-users who in the baseline were already using safe water, either from an improved water source, or from a water treatment method other than boiling. The value has been sourced from baseline survey data /23/.
Findings	None
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the VPA-DD /10/. The value applied is correct and justified.

q_i , Capacity of the household or institutional water treatment technology

SDG Indicator	13		
Means of verification	This parameter is referred to capacity of the household or institutional water treatment technology.		
	Description	UltraFLO	UltraTAB

	Dosage rate (Treatment Capacity (Ltrs))	FLO:340,000L/ Cartridge Inline: 720,000L/Cartridge	Big Pack: 48,000 L/Tab Pack Small Pack: 10,000 L/ Tab Pack
	The value has been sourced from technological specifications data provided by CME /18/.		
Findings	No findings were raised.		
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the VPA-DD /10/. The value applied is correct and justified.		

$f_{nrb,f,y}$, Fractional non-renewability status of woody biomass fuel during year y, in case the baseline fuel is biomass or charcoal

SDG Indicator	13
Means of verification	This parameter is referred to fractional non-renewability status of woody biomass fuel during year y in case the baseline fuel is biomass or charcoal. The value applied is 93.51% which is confirmed from the UN Data and FRA 2015 shared by CME /25/.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the VPA-DD /10/. The value applied is correct and justified.

QPW_p , Volume of drinking water per person per day for premises type p

SDG Indicator	13		
Means of verification	The value of this parameter has been applied as per the applied methodology /8/.		
	Type of Premises	Default value	Applicability
	Full-day premises	4 L /person / day	Premises like households etc.
	Boarding school	4 L /person / day	-
	Half time premises	3 L /person / day	Premises like day schools, offices etc.
Findings	No findings were raised.		
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the VPA-DD /10/. The value applied is correct and justified.		

E.5.2 Data and parameters monitored

$ABS_{Project}$ Access to Basic Services (number of premises with at least one WPS distributed / installed under the project)

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	1
	Measuring /Reading /Recording frequency	Continuous
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes

	Monitoring equipment	NA
	How were the values in the monitoring report verified?	9,971 The verification team confirmed the value from installation database provide in Installation database of ER sheet and found it to be correct /15/. The institutions selected during through acceptance sampling were also checked for the details mentioned for these schools in the database. The information was found to be consistent between the database and the VVB survey.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	In case project participants have deviation from gold standard?	Yes, please see section E.4.
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan /10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/10/.	

IH_{Project} % of users reporting reduce in incidence of diarrhoea and water borne diseases etc. (improved health) in project

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	3
	Measuring /Reading /Recording frequency	Annual/ Biennial
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	92.33% This parameter accounts for % of users reporting reduction in incidence of diarrhoea and water borne diseases etc. in project (improved health). The parameter is determined through surveys and the frequency of monitoring is annual or biennial. Surveys forms/21/ were checked and found to be consistent with the ER sheet (worksheet: monitored samples)/15/. VVB has conducted acceptance sampling to verify the CME survey results. The institution heads interviewed during the remote audit (11 samples) confirmed that of school staff or students reported reduction in cases of diarrhoea and water borne diseases and confirmed that no such incidence was recorded during the current

		monitoring period. The respondents provided positive feedback to the WPS technology installed at the school. The information was found to be consistent between the CME survey and the VVB field survey.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The CME staff conducting the surveys are trained as confirmed from the training records/20/.
	In case project participants have deviation from gold standard?	Yes, please see section E.4.
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan /10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/10/.	

SWQ_{Project} % WPS distributed / installed providing safe drinking water to beneficiaries in project

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	6
	Measuring /Reading /Recording frequency	Annual/ Biennial
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	87.89 % The frequency of monitoring is annual or biennial. The value obtained from water quality test is correctly calculated and reported in sample size calculation worksheet of ER sheet /15/. The tests were conducted by the trained staff of CME and results were evaluated in the central office. Test reports for 11 samples were checked /34/ and found to be consistent with the survey results were presented in ER sheet (monitoring survey)/15/.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, CME has employed 25 personnel that has been trained to conduct monitoring surveys and water quality test. Training records, attendance sheets /19, 20/were reviewed.
	In case project participants have deviation from gold standard?	Yes, please see section E.4.
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/10/.	

AAC_{Project} Access to affordable and clean energy (% of operating WPS units under Project)

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	7
	Measuring /Reading /Recording frequency	Annual/ Biennial
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	96.51% The value is correctly calculated and reported in sample size calculation worksheet of ER sheet /15/. The parameter is determined through annual surveys. Surveys forms/21/ were checked and found to be consistent with the ER sheet (worksheet: monitored samples)/15/. VVB has conducted acceptance sampling to verify the CME survey results. 11 samples were checked and found to be consistent with the survey results were presented in ER sheet (monitoring survey)/15/.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The staff conducting the surveys are trained as confirmed from the training records/20/.
	In case project participants have deviation from gold standard?	Yes, please see section E.4.
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/10/.	

QE IG_{project} Quantitative Employment and income generation (Number of person (male and female) hired under project)

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	8
	Measuring /Reading /Recording frequency	Annual/ Biennial
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	Total number of employees hired during this monitoring period is 17.

		This parameter represents quantitative Employment and income generation (Number of person (male and female) hired under project). The value has been confirmed from statement of employees at impact Water document /35/.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	In case project participants have deviation from gold standard?	NA
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/10/.	

$M_{q,y}$ Ongoing water quality indicated as the fraction of the samples that pass microbial quality standard

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13
	Measuring /Reading /Recording frequency	Annually or more frequently
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	The value of this parameter is obtained as 0.9567 from water quality test. Water quality testing of the project devices was conducted on sampling basis. The samples of treated water collected from project devices and tested using field testing kits/34/. Institution heads interviewed during remote audit confirmed that representative from VPA Implementers had visited to collect water sample.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The staff conducting the test are trained as confirmed from the training records/20/.
	In case project participants have deviation from gold standard?	Yes, please see section E.4.
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/10/.	

Water hygiene education campaigns - Hygiene campaigns carried out among project safe water end users

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13

	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	117 samples monitored Water hygiene education campaigns is conducted annually. The verification team reviewed Hygiene Awareness Campaign Report /22/ and the questionnaire used for project monitoring that consists of questions related to hygiene. Monitoring Surveys forms/21/ were checked and found to be consistent with the ER sheet worksheet: monitored samples/15/. VVB has conducted acceptance sampling to verify the CME survey results. The institution heads interviewed during remote audit (11 samples) confirmed hygiene campaigns were conducted at the school. The information was found to be consistent between the CME survey and the VVB survey.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The staff conducting the surveys are trained as confirmed from the training records/20/.
	In case project participants have deviation from gold standard?	Yes, please see section E.4.
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/10/.	

X_{cleanboil,y} Proportion of project end-users that boil safe (treated, or from safe supply) water after installation of project technology

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	The parameter accounts for Proportion of project end-users that boil safe (treated, or from safe supply) water after installation of project technology.

		The response recorded in the Surveys forms/21/ were checked and found to be consistent with the ER sheet (worksheet: monitored samples)/15/. VVB has conducted acceptance sampling to verify the CME survey results. The institution heads interviewed during the remote audit (11 samples) confirmed that none of the school boil water for drinking purpose and they only consume water purified from installed WPS unit in the school. The information was found to be consistent between the CME survey and the VVB survey.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The staff conducting the surveys are trained as confirmed from the training records/20/.
	In case project participants have deviation from gold standard?	Yes, please see section E.4.
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/10/.	

HN_{p,y} Number of individuals per premises type p in the project boundary in year y

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	481 The parameter represents the number of individuals per premises in the project boundary. The value reported is the average value across all the VPAs covered in the monitoring period. The number of individuals in each of the schools covered under the sampled data (11 samples covered under acceptance sampling) was cross-checked during remote audit through interviews with the head of the institutions and found correct. To address FAR 02 raised by GS during performance review for MP 02, VVB covered 11 additional samples to confirm the institute's population. The total

		population (students + staff) reported by school representatives during interview was found consistent with the total population count reported in the installation database for each sampled institution. The list of institutes interviewed are recorded under Appendix 5 of this report.
		The verification team confirms that value reported in the ER sheet is correct.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The staff conducting the surveys are trained as confirmed from the training records/20/. In addition, PD will cross-check the value of the parameter with at least once other sources as mentioned in the MR (Project survey, Official government publications or statistics, Credible published literature for project region, or Studies by academia, NGOs or multilateral institutions).
	In case project participants have deviation from gold standard?	Yes, please see section E.4.
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/10/.	

$N_{p,y}$ Accumulated number of premises type p with at least one individual project technology in year y

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	9,971 The parameter calculates the total number of premises with at least one individual technology type. The verification team confirms that each WPS unit distributed in schools were given unique product ID and it was ensured that there is no double counting.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, CME has employed 25 personnel that has been trained to conduct monitoring surveys and water quality test. Training records and HR records were reviewed.
	In case project participants have deviation from gold standard?	NA
Findings	No findings were raised.	

Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/10/.
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$U_{p,y}$ Usage rate of the project technology by premises type p during year y

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	96.51% The value is correctly calculated and reported in monitoring report and ER calculation sheet. /5,15/ The CME has determined the value of the parameter through usage surveys. Surveys forms/21/ were checked and found to be consistent with the ER sheet (worksheet: monitored samples)/15/. VVB has conducted acceptance sampling to verify the CME survey results. The institution heads interviewed during remote audit (11 samples) confirmed that the device installed in their school is active. The information was found to be consistent between the CME survey and the VVB survey.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Surveys have been conducted by trained staff/20/.
	In case project participants have deviation from gold standard?	Yes, please see section E.4.
Findings	CL 01 was raised and resolved	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/10/.	

$DP_{p,y}$ Average days the project technology is present for end-users in the premises p in year y

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes

	Monitoring equipment	NA
	How were the values in the monitoring report verified?	The number of operational school days in the monitoring period is 93, excluding weekends, holidays and term-breaks, as applicable for boarding and non-boarding premises. The school academic calendar/32/ for Kenya was checked to confirm that the number of days has been calculated correctly removing the holidays. Furthermore, during the interviews the representative of the institutions confirmed that they adhere to the academic calendar issues by the Ministry of Education.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	In case project participants have deviation from gold standard?	Yes, please see section E.4.
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/10/.	

$DN_{p,y}$ Average number of individual project technologies in each project premises type p in year y

Means of verification	Criteria/Requirements	Assessment/Observations
	SDG Indicator	13
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	NA
	How were the values in the monitoring report verified?	The total number of individual project units by each project premise type in each specific VPA is recorded in the database and monitored annually through surveys. The number of units were checked during the VVB sampling and institution heads were asked during remote audit about the total number of units installed in each school and cross-checked from the installation database provided in ER calculation sheet /15/.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	NA
	In case project participants have deviation from gold standard?	Yes, please see section E.4.

Findings	No findings were raised.
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /9,10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan /9,10/.

E.5.3. Comparison of monitored parameters with last monitoring period

Means of verification	Data/Parameter	Value obtained in this monitoring period	Value obtained last monitoring period
	ABS _{Project}	9,971	9,969
	IH _{Project}	92.33	94.39
	SWQ _{Project}	92.33	94.39
	AAC _{Project}	96.51	93.17
	QE IG _{Project}	17	17
	M _{q,y}	0.9567	0.9439
	Water hygiene education campaigns	117 samples monitored	115 samples monitored
	X _{cleanboil,y}	0%	0%
	HN _{p,y}	481	460
	N _{p,y}	9,971	9,969
	U _{p,y}	96.51	93.17
	DP _{p,y}	93	92
	DN _{p,y}	1.0	1.0
Findings	No findings were raised.		
Conclusion	This is the third monitoring period of verification of the VPAs included under the PoA. The verification team confirms that all the values of monitoring parameters obtained in this monitoring period is accurately calculated and reported in monitoring report and ER sheet /5,15/.		

E.6. Implementation of sampling plan

Means of verification

The CME as per the monitoring plan has followed CDM Guidelines for sampling and surveys for CDM project activities and programmes of activities /14/ to design the sampling plan for the VPAs in line with the applied methodology are Emissions reduction from Safe Drinking Water Supply, Version 1.0/8/. The CME has applied across VPA sampling for all the 17 VPAs covered under this PoA. PD has provided random number generator screenshots /37/ to substantiate the process of sampling process. VVB has checked the shared evidence and confirmed that the PD has done random sampling and the samples were chosen randomly for monitoring. As per the sampling plan stated in the monitoring report /5/, a minimum 95% confidence interval and a 10% margin of error requirement is achieved for the sampled parameters.

Parameters determined through sampling

Data/ Parameter	Description of parameter
M _{q,y}	Ongoing water quality indicated as the fraction of the samples that pass microbial quality standard
U _{p,y}	Usage rate of the project technology by premises type p during year y

Other parameters:

Data/Parameter	Description
ABS _{Project}	Access to Basic Services (number of premises with at least one WPS distributed / installed under the project)
IH _{Project}	% of users reporting reduction in incidence of diarrhoea and water borne diseases etc. (improved health) in project

SWQ _{Project}	% WPS distributed / installed providing safe drinking water to beneficiaries in project
AAC _{Project}	Access to affordable and clean energy (% of operating WPS units under Project)
QE IG _{Project}	Quantitative Employment and income generation (Number of person (male and female) hired under project)
Water hygiene education campaigns	Hygiene campaigns carried out among project safe water end users
X _{cleanboil,y}	Proportion of project end-users that boil safe (treated, or from safe supply) water after installation of project technology in year y
HN _{p,y}	Number of individuals per premises type p in the project boundary in year y
N _{p,y}	Accumulated number of premises type p with at least one individual project technology in year y
U _{p,y}	Usage rate of the project technology by premises type p during year y
DP _{p,y}	Average days the project technology is present for end-users in the premises p in year y
DN _{p,y}	Average number of individual project technologies in each project premises type p in year y

The target population is institutions of Kenya. All the VPAs i.e., GS11289 to GS11305 (VPA 31 to VPA 47) is implemented in the same physical location of Kenya with same baseline scenario and technology and therefore the CME has chosen to apply across VPA sampling.

The CME has applied stratified random sampling for determining the usage rate of units distributed based on age as project technologies age over time and/or are replaced and accordingly calculate the sample size.

The CME requested for the deviation from GS/26/ with regards to the monitoring requirement of the WPS and the requirements of the methodology which got approved on 07/12/2021.

The CME has sought deviation for the current crediting period. Though the applied methodology para 4.2.2./8/ allows only 10 VPAs to be grouped together for across VPA sampling, CME has clubbed 17 VPAs under current verification. Moreover, the sample size has been determined through 95/10 C/P, but the CME has applied maximum limit of 100 for the sample size in line with para 4.2.3. of the applied methodology/8/. The deviation form was checked to confirm the above/26/.

Detail of approved deviation:

Reference: Dev_184

Title: Deviation from ageing-based survey for WPS

Date of approval: 07/12/2021

Link: <https://www.goldstandard.org/project-developers/standard-documents>

The deviation was also requested for no units-based scale limit and lifespan of the units to be considering the renewal of cartridges/tablets. Thus, also removing the factor of aging of the product over the time.

CME requested to have project surveys for WPS stratifying each technology irrespective of their age and by grouping more than 10 small scale VPAs

	together. This was approved by GS as WPS system are not affected by ageing over time. The functioning of the WPS is dependent on filters/cartridges. Once the cartridges or filters are fully consumed and replaced with a completely new one making it revive their lifetime again. The collection of monitoring data is done by trained personnel appointed by CME team. Usage related surveys and collection of water samples for water quality test has been done by the monitoring team. The monitoring (Surveys and Water Quality Tests) was conducted from 30/01/2023 to 23/02/2023/21/. The sampling approach undertaken by CME is duly explained under section D.4 of the monitoring report /5/, which has been assessed by the verification team and found to be correct and in-line to the standard /13/. Reliability and precision calculation: The verification team has verified the ER calculation spreadsheets /15/ with the monitored data, where the actual achieved precision is calculated against the Guidelines outlined under "Standard for sampling and surveys for CDM project activities and Programme of Activities" v9.0 /13/ and confirms that the calculation of achieved reliability was done correctly. All parameters of interest are included in the ER spreadsheet for the VPAs. These were checked for the input values as well as formula applied and were found consistent. The reliability (demonstration of precision achieved after the survey results) is depicted in the ER calculation sheets/15/ corresponding to final Monitoring Report /5/, which were also found correct. Thus, the verification team confirms that in all cases the reliability has been demonstrated and the results are reliable.
Findings	None
Conclusion	Sampling plan followed in the PoA and reported in monitoring report, ER sheet /5,15/ is in line with CDM guidelines for sampling and surveys /14/ and applied methodology /8/.

E.7. Assessment of data and calculations of emission reductions or net removals

E.7.1. Calculations of baseline value of each SDG Impact

Means of verification	The targeted SDG and its corresponding baseline estimate are given below:			
	Sustainable Development Goals Targeted	SDG Impact	Parameter description	Baseline estimate
	SDG 1	No Poverty	Number of premises with at least one WPS distributed / installed under the baseline	0
	SDG 3	Good Health and Well-Being	% Of users reporting reduction in incidence of diarrhoea and water borne diseases etc. in baseline (improved health)	0
	SDG 6	Clean Water and Sanitation	% Users reporting safe water quality in baseline	4.44%
	SDG 7	Affordable and Clean Energy	Access to affordable and clean energy (% of operating WPS units under Baseline)	0

SDG 8	Decent Work and Economic Growth	Quantitative Employment and income generation (Number of person (male and female) hired under Baseline)	0
SDG 13	Climate Action	CERs	362,022

For SDG 13. Climate Action, baseline emissions are calculated as follows:

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

Where:

EF_b = Emission factor for the use of fuel to obtain safe water in the baseline (tCO₂e/L)

$SE_{w,b,y}$ = Specific energy required to boil water (kJ/L), to be calculated as per the paragraph below

x_f = Proportion of fuel f used in the baseline (fraction determined based on an energy basis)

$EF_{b,f,CO2}$ = CO₂ emission factor from use of fuel f (tCO₂/TJ)

$EF_{b,f,nonCO2}$ = Non-CO₂ emission factor arising from use of fuel f, when the baseline fuel f is biomass or charcoal (tCO₂e/TJ). This parameter is omitted when f is a fossil fuel.

$f_{NRB,f,y}$ = Fractional non-renewability status of woody biomass fuel during year y (fraction). For biomass, it is the fraction of woody biomass that can be established as non-renewable. This parameter is omitted when f is a fossil fuel.

f = Index for baseline fuel

Calculations of specific energy required to boil water using the baseline technology ($SE_{w,b,y}$) is as follows:

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

Where:

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

η_{wb} = Efficiency of the stoves for baseline water boiling (%). Weighted average of baseline stove types.

The baseline emissions shall be calculated as follows:

$$BE_y = EF_b \times (1 - C_b - X_{cleanboil,y}) \times Q_y \times M_{q,y}$$

Where:

BE_y = Baseline emissions from the use of fuel to obtain safe water in the baseline (tCO₂e)

C_b = Proportion of project end-users who in the baseline were already using a safe water supply that did not require boiling (%)

$X_{cleanboil,y}$ = Proportion of project end-users that boil safe water in the project year y (%)

Q_y = Quantity of safe drinking water provided by the project in year y (L)

$M_{q,y}$ = Modifier for the water quality in year y

In the case of IWT, the quantity of safe drinking water provided by the project Q_y is determined as follows

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

	Where: $N_{p,y}$ = Number of premises type p with at least one project technology in year y $U_{p,y}$ = Usage rate of the project technology by premises type p during year y (%) $QPW_{hh,p,y}$ = Volume of drinking water per premises p per day in year y (L) $DP_{p,y}$ = Days the project technology is present for end-users in the premises p in year y The volume of drinking water per premises is determined by considering whether the capacity of the project device is sufficient to provide at least the default amount of drinking water, as follows: $QPW_{hh,p,y} = \min((q_i \times DN_{p,y}), (QPW_p \times HN_{p,y}))$ Where: q_i = Capacity of the HWT or IWT individual project technology (L) $DN_{p,y}$ = Average number of individual project technologies in each project premises type p in year y $HN_{p,y}$ = Number of individuals per premises type p (e.g. household, school) in year y QPW_p = Volume of drinking water per person per day for premises type p (L) * average number of operational days in the year. Applied the default value or monitored value through water consumption field tests in the project scenario, capped at 5.5 L per person per day The calculation of the baseline has been verified from the ER calculation sheet and was found correct and consistent.
Findings	No findings were raised.
Conclusion	The verification team verified : a) A complete set of data for the monitoring period was available and the verification of each monitoring parameter is elaborated under Section E.5 of this report. The complete monitoring data is also presented in the corresponding ER calculations sheet /15/ of final Monitoring Report /5/. b) The information provided in the monitoring report was cross checked with other sources, wherever appropriate and available, and such information is also included under Section E.5 of this report. c) The calculations of baseline emissions as presented in the corresponding ER calculations sheet /15/ of final Monitoring Report /5/ were checked and found to be consistent with the formulae and methods described in the registered monitoring plan of VPA-DD/10/, registered PoA-DD /9/ and the applied methodology /8/. d) All assumptions used in the emission calculations were found appropriate and therefore justified e) Appropriate emission factors, IPCC default factors and other reference values have been correctly applied. This has also been elaborated under Section E.5 of this report.

E.7.2. Calculations of project value of each SDG Impact

Means of verification	The targeted SDG and its corresponding project estimate are given below:			
	Sustainable Development Goals Targeted	SDG Impact	Parameter description	Project estimate
	SDG 1	No Poverty	Number of premises with at least one WPS distributed / installed under the project	9,971
	SDG 3	Good Health and Well-Being	% Of users reporting reduction in incidence	92.33%

			of diarrhoea and water borne diseases etc. in project (improved health)	
	SDG 6	Clean Water and Sanitation	% Users reporting safe water quality in project	92.33%
	SDG 7	Affordable and Clean Energy	Access to affordable and clean energy (% of operating WPS units under Project)	96.51%
	SDG 8	Decent Work and Economic Growth	Quantitative Employment and income generation (Number of person (male and female) hired under Project)	17
	SDG 13	Climate Action	CERs	0
For SDG 13. Climate Action, the project estimate is 0 as the project technology involves chlorination which does not require any fuel/ electricity use. The assessment team has reviewed the equations used in line with the VPA-DD and applied methodology. The calculation of the baseline has been verified from the ER calculation sheet /15/ and was found correct and consistent.				
Findings	No findings were raised.			
Conclusion	The verification team verified that: a) A complete set of data for the monitoring period was available and the verification of each monitoring parameter is elaborated under section of this verification report. Also, the monitoring has been provided for the review in the ER calculation sheet /15/. b) The information provide in the monitoring report /5/ was cross-checked with other source, wherever appropriate.			

E.7.3.Calculation of leakage GHG emissions

Means of verification	The verification team reviewed section B.6.1 of the VPA-DD/10/ and found that no potential leakage is present. The leakage assessment has been done in line with the methodology "Emission reductions from Safe Drinking Water Supply" Version 1.0. As reported, the leakage shall be reassessed after the end of second year of crediting period since, the monitoring frequency for leakage is "every two years".
Findings	No findings were raised.
Conclusion	Leakage assessment was found to be done in line to the applied methodology and verified from VPA-DD /8,10/.

E.7.4.Calculations of net benefits for each SDG Impact

Means of verification	Net benefits achieved under each SDG Impact are tabulated below:				
	SDG	SDG Impact	Baseline estimate	Project estimate	Net benefit
	1	No Poverty	0	9,971	9,971
	3	Good Health and Well Being	0	92.33%	95.67%
	6	Clean Water and Sanitation	4.44%	92.33%	87.89%
	7	Affordable and Clean Energy	0	96.51%	96.51%
	8	Decent Work and Economic Growth	0	17	17

	13	Climate Action	362,022 tCO ₂ e	0	362,022 tCO ₂ e	
Findings	Below are the equations used for calculating net benefits for each SDG Impact Net Benefit (SDG 1) = $ABS_{Project} - ABS_{Baseline}$ Net Benefit (SDG 3) = $IH_{Project} - IH_{Baseline}$ Net Benefit (SDG 6) = $SWQ_{Project} - SWQ_{Baseline}$ Net Benefit (SDG 7) = $AAC_{Project} - AAC_{Baseline}$ Net Benefit (SDG 8) = $QE\ IG_{Project} - QE\ IG_{Baseline}$ The emission reductions are calculated as follows: $ERY = BEy - PEy - LEy$ Where: ERY = Emission reductions in year y (t CO₂e/yr) BEy = Baseline emissions in year y (t CO₂e/yr) PEy = Project emissions in year y (t CO₂e/yr) LEy = Leakage emissions in year y (t CO₂e/yr)					
Conclusion	No findings were raised. The verification team verified that - The complete data was available and is duly reported; - The description with regards to cross-check of reported data is included under respective parameters and its assessment has been done in section E.5 of this report - Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals, project emissions and leakage emissions were followed - The total number of ERs achieved during the current monitoring period is 362,022 tCO₂e.					

E.8. Comparison of actual GHG ER value achieved during this monitoring period with estimated value

Means of verification	The value estimated in ex ante calculations of approved PoA-DD and VPA-DDs /9,10/ for the monitoring period and the actual values achieved during this monitoring period has been report in section E.5 of the monitoring report /5/.		
	VPA No.	Values estimated in ex ante calculation of approved PDD for this monitoring period (tCO2e)	Actual values achieved during this monitoring period (tCO2e)
	13-GS11289	27,852	18,717
	13-GS11290	27,852	22,592
	13-GS11291	27,852	24,143
	13-GS11292	27,852	25,380
	13-GS11293	27,852	23,403
	13-GS11294	27,852	23,828
	13-GS11295	27,852	25,475
	13-GS11296	27,852	25,438
	13-GS11297	27,852	25,713
	13-GS11298	27,852	23,582
	13-GS11299	27,852	25,780

	13-GS11300	27,852	22,495
	13-GS11301	27,852	17,278
	13-GS11302	27,852	20,362
	13-GS11303	27,852	21,397
	13-GS11304	27,852	8,888
	13-GS11305	27,852	7,551
	Total	473,484	362,022
	The emission reductions have been correctly calculated in accordance with the applied methodology /8/. The ER calculation sheet /15/ were reviewed and all the values report in monitoring report is consistent with the ER sheet.		
Verified and certified emission reductions as per commitment period:			
Commitment period		Amount achieved	
01/07/2022– 31/12/2022		362,022 tCO2e	
Findings	No findings were raised.		
Conclusion	The verification team confirms that: a) The actual values of achieved ERs during this monitoring period has been correctly reported in the monitoring report. b) The total number of ERs achieved during the current monitoring period is 362,022 tCO2e.		

E.9. Safeguarding principles

Means of verification	There was no safeguarding principle assessed 'Yes' or 'Potentially' and added to this monitoring plan.
Findings	None
Conclusion	Not applicable.

E.10. Stakeholder Inputs and Legal Disputes

Means of verification	There were no legal disputes, and no inputs/ grievances were received for this monitoring period. CME collects feedback on a regular basis and during on-site visit, it was found that none of the end-users have issues with the WPS system. No negative feedback was received as confirmed through interviews with the representatives of the institutions. PD confirmed in section G.3 of the MR that the is in compliance with the Host Country's legal, environmental, ecological, and social regulation and has not reported any challenges related to the same in the concerned monitoring period.
Findings	No findings were raised.
Conclusion	The validation team confirms that the PoA receives no negative feedback on the WPS units distributed to institutions.

E.11. Continuous input and grievance mechanism

Means of verification	The CME has provided various means through which the end-users can contact them. The continuous Input or Grievance Expression Process Books is part of the project implementation and has been made available at office of Impact Water in Kenya. The stakeholder also has the option of contacting the CME via post or email to details provided below: Impact Water PO Box 1903-00606, Nairobi House #44, Muthithi Road Westlands, Nairobi. Contact no.: +256 790 911 934 Email: info@impactcarbon.org GS Contact (mandatory): help@goldstandard.org
Findings	No findings were raised.
Conclusion	The verification team confirms that the PoA receives no negative feedback on the WPS units distributed to institutions. The verification team confirms the expression

book which is available in all sites & a working email ID, reflects the good practice in the host countries.

SECTION F. Internal quality control

The draft verification report prepared by the verification team was reviewed by an independent technical review team to confirm if the internal procedures established and implemented by Earthood were duly complied with and such opinion/conclusion is reached in an objective manner that complies with the applicable GS rules/requirements. The technical review team is collectively required to possess the technical expertise of all the technical area/sectoral scope the project activity relates to. All team members of technical review team were independent of the verification team.

The technical review process may accept or reject the verification opinion or raise additional findings in which case these must be resolved before requesting for registration. The technical review process is recorded in the internal documents of Earthood, and the additional findings gets included in the report. The final report approved by the technical reviewer is authorized by Managing Director and issued to the CME and/or submitted for request for registration, as appropriate on behalf of Earthood Services Private Limited.

SECTION G. Verification opinion

The verification of PoA "Improved Cookstove and Safe Water Programme" was performed based on rules and requirements defined by GS4GG Principles and Requirements and UNFCCC for the CDM program of activities. The purpose of this project activity is to provide safe and clean drinking water through dissemination of low GHG water purification technologies (WPS) to schools and other institutions in Kenya. Earthood Services Private Limited (Earthood), contracted by Impact Carbon, has performed the independent verification of the emission reductions for the GS PoA "Improved Cookstove and Safe Water Programme" (GSID: 11189) for the third monitoring period 01/07/2022– 31/12/2022 (Inclusive of both days) as reported in the Monitoring Report, Version 3.0 dated 03/10/2023.

Earthood confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. Project representatives 'Impact Carbon' and 'Impact Water' are responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

The verification activities were conducted in accordance with ESPL's CDM Quality Manual System as per the steps indicated under Section A of this report. The verification process has resulted in conclusion that the monitoring report is in compliance with applicable CDM and GS rules and regulations and in accordance with applied methodology, Emission reductions from Safe Drinking Water Supply version 1.0.

As a result, it is confirmed that the emission reductions achieved from the implementation of GS PoA "Improved Cookstove and Safe Water Programme" are correctly reported in the GS Monitoring Report, Version 3.0 dated 03/10/2023 and corresponding ER calculation sheets for the monitoring period 01/07/2022– 31/12/2022 (inclusive of both days) which are amount as 362,022 tCO₂e.

SECTION H. Certification statement

Earthood Services Private Limited (Earthood), contracted by Impact Carbon, has performed the independent verification of the emission reductions for the GS PoA "Improved Cookstove and Safe Water Programme" (GSID: 11189) for the third monitoring period 01/07/2022– 31/12/2022 (Inclusive of both days) as reported in the Monitoring Report, Version 3.0 dated 03/10/2023.

Project representatives 'Impact Carbon' and 'Impact Water' are responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the programme of activity. It is our responsibility to express an independent verification statement on the reported GHG emission reductions from the project activity.

In our opinion, the GHG emissions reductions reported for the project activity for the period 01/07/2022– 31/12/2022 (inclusive of both days) are fairly stated in the Monitoring Report, Version 3.0 dated 03/10/2023. The GHG emission reductions were calculated correctly on the

basis of the approved baseline and monitoring methodology Emission reductions from Safe Drinking Water Supply version 1.0/8/ and the monitoring plan contained in the PoA-DD version 5.0 dated 25/05/2022. Earthood Services Private Limited is able to certify that the GS PoA "Improved Cookstove and Safe Water Programme" (GSID: 11189) during the monitoring period 01/07/2022– 31/12/2022 (inclusive of both days) has achieved emission reductions amount to 362,022 tCO₂e.

Verified and certified emission reductions as per commitment period:

Commitment period (01/07/2022– 31/12/2022)	Amount achieved
GS11289	18,717
GS11290	22,592
GS11291	24,143
GS11292	25,380
GS11293	23,403
GS11294	23,828
GS11295	25,475
GS11296	25,438
GS11297	25,713
GS11298	23,582
GS11299	25,780
GS11300	22,495
GS11301	17,278
GS11302	20,362
GS11303	21,397
GS11304	8,888
GS11305	7,551
Total	362,022 tCO₂e

		Amount Achieved					
Start Dates	End Dates	VERs (tCO₂e)	ABS (SDG1)	IH (SDG3)	SWQ (SDG6)	AACS (SDG7)	QE IG (SDG8)
01/07/2022	31/12/2022	362,022	9,971	92.33%	87.89%	96.51%	17

Appendix 1. Abbreviations

Abbreviations	Full texts
General	
ACM	Approved Consolidated Methodology
AM	Approved Methodology
BE	Baseline Emission
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CME	Coordinating and Managing Entity
CL	Clarification Request
CO ₂	Carbon dioxide
CP	Crediting Period
DR	Desk Review
EB	Executive Board
EI	External Individual
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Green House Gas
GSC/GSP	Global Stakeholder Consultation Process
IPCC	Intergovernmental Panel on Climate Change
IR	Internal Resource
KP	Kyoto Protocol
LSC	Local Stakeholder Consultation Process
MoC	Modalities of Communication
MoV	Means of Verification
MP	Monitoring Plan
ODA	Official Development Assistance
PA	Project Activity
PCP	Project Cycle Procedure
PD	Project Developer
PDD	Project Design Document
PE	Project Emission
PoA	Programme of Activities
PoA DD	Programme of Activities Design Document
PS	Project Standard
RCP	Renewal of Crediting Period
RFR	Request for Registration
tCO ₂ e	tonnes of Carbon di Oxide equivalent
TPH	Tonnes Per Hour
TR	Technical Reviewer
UNFCCC	United Nations Framework Convention on Climate Change
V	Version
VPA	Verified Project Activity
VVB	Validation and Verification Body
VVS	Validation and Verification Standard
Project Specific	
GS4GG	Gold Standard for Global Goals
LSC	Local Stakeholder Consultation
MoV	Means of Verification
SDG	Sustainable Development Goals
WPS	Water Purification System technology

Appendix 2. Competence of team members and technical reviewers

Competence Statement			
Name	Deepika Mahala		
Country	India		
Education	M. Sc. (Environment Management), GGSIP University B.Sc. Hons. (Chemistry), Sri Venkateshwar College, DU		
Experience	6 Years +		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	ACM0002, AMS.I.D., AMS.I.A, AMS.III.AV, AMS.II.G, AMS-II.C		
Local expert	YES (India, Bangladesh)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (TA 1.2 & TA 3.1)		
Reviewed by	Shifali Guleria (QM)	Date	28/04/2022
Approved by	Kaviraj Singh (MD)	Date	28/04/2022

Competence Statement			
Name	Anjali Chaudhary		
Education	Bachelor of technology in Civil Engineering		
Experience	8 months		
Field	Civil Engineering		
Approved Roles			
Team Leader	Yes (VM)		
Validator	Yes		
Verifier	Yes		
Local expert	Yes (India)		
Financial Expert	No		
Technical Reviewer	No		
TA Expert (X.X)	Yes (VM TA 3.1)		
Reviewed by	Shifali Guleria (Quality Manager)	Date	19/06/2023
Approved by	Deepika Mahala (Technical Manager)	Date	19/06/2023

Competence Statement			
Name	Virginia Njeri		
Country	Kenya		
Education	Diploma (Business Management)		
Experience	7 Years		
Field	Administration		
Approved Roles			
Team Leader	No		
Validator	No		
Verifier	No		
Methodology Expert	No		
Local expert	Kenya		
Financial Expert	No		
Technical Reviewer	No		
TA Expert	No		
Reviewed by	Abhishek Mahawar	Date	01/03/2018
Approved by	Ashok Kumar Gautam	Date	01/03/2018

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1.	GS	GS Principle & Requirements	Version 1.2	Others
2.	GS	GS Validation & Verification Standard	Version 1.0	Others
3.	UNFCCC	Standard: CDM PS for PoA	Version 3.0	Others
4.	UNFCCC	Standard: CDM VVS for PoA	Version 3.0	Others
5.	CME	Monitoring report	Version 3.0 dated 03/10/2023	CME
6.	GS	Monitoring report template	Version 1.1	Others
7.	GS	Template Guide Monitoring report	Version 1.1	Others
8.	GS	Emission Reductions from Safe Drinking Water Supply	Version 1.0	Others
9.	CME	PoA-DD	Version 5.0 dated 25/05/2022	CME
10.	CME	VPA-DDs GS11289, GS11290, GS11291, GS11292, GS11293, GS11294, GS11295, GS11296, GS11297, GS11298, GS11299, GS11300, GS11301, GS11302, GS11303, GS11304, GS11305	Version 6.0 dated 11/08/2022	CME
11.	GS	GS Programme of Activity requirements	Version 1.2	Others
12.	GS	Community Services Activity requirements	Version 1.2	Others
13.	UNFCCC	Standard for Sampling and surveys for CDM project activities and programmes of activities	Version 9.0	Others
14.	UNFCCC	Guidelines for sampling and surveys for CDM project activities and programmes of activities	Version 4.0	Others
15.	CME	ER calculation sheet	Version 2.0 dated 25/07/2023	CME
16.	CME	Table 3.18 Basic Report Based on 2015/16 Kenya Integrated Household Budget Survey	March 2018	CME
17.	CME	VPA implementer and CME contract	30/06/2021	CME
18.	Medentech	Manufacturer's specifications documents	13/05/2021	CME
19.	CME	WQT Training certificates	January 2023	CME
20.	CME	Training attendance records and Photographs	26/01/2023	CME
21.	CME	Filled Monitoring survey forms	30/01/2023 to 23/02/2023	CME
22.	CME	Hygiene Awareness Campaign Report	July- December 2022	CME
23.	CME	Baseline survey sheet	-	CME
24.	IPCC	IPCC default value for wood and charcoal: IPCC 2006 Guidelines for National Greenhouse gas inventories	2006	Others
25.	CME	Calculations of the fraction of non-renewable biomass (f_{NRB}) Kenya	-	CME
26.	GS	Deviation request form (DEV_184)	07/12/2021	CME

27	Google	Google maps	-	Other
28	CME	WPS installation Database	-	CME
29	CME	Purchase order	-	CME
30	CME	Salesforce records	-	CME
31	CME	Delivery notes	-	CME
32	CME	School academic calendar	-	CME
33	ESPL	Previous Verification Report MP02	Version 1.1 Dated 12/04/2023	Others
34	CME	Water quality test reports	30-01-2023 to 23-02-2023	CME
35	VPA Implementer	Statement of Employees at Impact Water	-	VPA Implementer
36	VVB	VVB audit records	-	-
37	CME	Random number generator screenshots	-	CME
38	GS	GS4GG Performance Review MP2	01/01/2022 to 30/06/2022	CME
39	GS	Deviation request form (DEV_425)	16/06/2023	CME
40	GS	Deviation request form (DEV_387)	02/05/2023	CME
41	GS	Site visit and remote audit Requirements and procedures	Version 2.0 Dated: 30/05/2023	Others

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

Table 1. Remaining FAR from GS4GG Performance Review MP2/Deviations

FAR ID	01	Section no.	D.2	Date : 01/07/2023
Description of FAR				
FAR from GS4GG Performance Review MP2				
In the next monitoring period and subsequent monitoring periods, the PD shall ensure that each school or college or institution uses actual days the unit is in operation. The computation of the exact number of days applied for each category shall transparently be shown and be supported with relevant evidence. Verifying VVB shall confirm the days during verification.				
Project participant response				Date : 25/07/2023
All project premises, except one, in Kenya are Primary and/or secondary school (except one) and thus follow the academic calendar published by the ministry of education. The same has been used to determine the number of actual days of operation within the monitoring period. The singular exception referred to above (Mt Zion Teachers College), is a teacher's training college for which the calendar specific to teachers training college published by ministry of education has been used for ER calculation. Thus, the PP has applied the actual number of operational days depending on the type of institution for ER calculation. For Institution (Premise) type, refer column D of the Tab: "Installation Database" of the ER calculator.				
Documentation provided by project participant				
NA				
DOE assessment				Date: 01/07/2023

During the interviews with the head of institutions VVB confirmed how the academic calendar for the institution is determined and all the respondents confirmed that they follow the academic calendar issued by the Ministry of Education, the samples covered by the CME included both the boarding and non-boarding type of premises.

Furthermore, through independent research the VVB established that the no of operational days is comparable to the publicly available calendars on the websites of educational institutes in Kenya.

Thus, the VVB confirms that the actual days of operation is correctly determined by the CME for each type of institution

Closed

FAR ID	02	Section no.	D.2	Date : 01/07/2023
Description of FAR				
FAR from GS4GG Performance Review MP2				
PD shall at each school calendar year, collect signed student and staff population confirmation letter from each institution. The letters can be collected whenever the PD makes regular UltraFlo and UltraTab supplies deliveries to schools and institutions, or each school or institution can send student population confirmation letter whenever they are making requisitions. The letters shall be archived and made available to verifying VVB to be used to counter check the project database and confirm student population.				
Project participant response				Date : 25/07/2023
The approved Deviation (DEV_425) exempt PD from executing the FAR during current MP and allows PD to execute the FAR starting from MP4 (01/01/2023 to 31/12/2023). However, during remote audit a total of 22 samples (11 institutes selected randomly from monitoring database and 11 additional non-monitored samples, selected randomly from the project population) were interviewed by VVB. The total population (students + staff) reported by school representatives during interview was found consistent with the total population count reported in the installation database for each sampled institution.				
Documentation provided by project participant				
NA				
DOE assessment				Date: 01/07/2023
DEV_425 approval dated 16/06/2023, allows the PD exemption from executing the FAR 02 during the current monitoring period i.e., MP03. During the remote audit, the VVB interviewed representatives from a total of 22 randomly selected institutions (11 institutes from monitoring database and 11 additional non-monitored samples, selected randomly from the project population, have been covered by the VVB to confirm the population size parameter HNp,y). The assessment team cross-checked the total population (including students and staff members) of the institutions against that recorded in the installation database and no discrepancy was observed. The PD shall collect the signed confirmation letter from each institution and the same shall be cross-checked by the verifying VVB monitoring period 04 onwards.				
Closed				

FAR ID	03	Section no.	E.4	Date : 01/07/2023
Description of FAR				

FAR from Deviation 184:
FAR 01

1. The stratified random sampling approach applied for sample size calculation for the monitoring survey must meet all the requirements under Appendix 3 of Guideline: Sampling and surveys for CDM project activities and programmes of activities.
2. Continuity in the project's monitoring activities is maintained, and PD can justify that no monitoring gaps exist (especially for SDG parameters) within the Monitoring Period(s). However, if gap(s) exist, the project shall justify that conservative approach(es) have been applied in line with section 3 of the Deviation Approval Requirements and Procedures (version 1.1) and overarching GS principles (as applicable).

FAR 02

The PD shall ensure that no systemic bias exists in the usage of chlorine tablets which might be leading to an overestimation of emission reduction. If a bias is identified, the PD must apply a conservative approach and shall also propose a revision to the monitoring plan to ensure a continuous supply of UltraTAB. The verifying VVB (through the end-user database and onsite verification) ensures that the PD meets the mentioned requirement and is following a conservative approach.

Project participant response	Date : 25/07/2023
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NA

Documentation provided by project participant

NA

DOE assessment	Date: 01/07/2023
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FAR 01

1. The sampling approach applied has been described under section D.4 of the MR, the VVB has reviewed the sample size calculation sheet and the reliability test to confirm that the sample size determined is found compliant of the guidelines provided by Sampling and surveys for CDM project activities and programmes of activities.
2. During the current MP the monitoring survey was conducted from 30/01/2023 - 23/02/2023, whereas the previous survey was conducted from 12/07/2022 - 02/08/2022 thus no gap is observed in the Monitoring activity which is further confirmed through interview with the monitoring personnel and PP representatives.

FAR 02

During the interviews with the representative of the institutions VVB confirmed that the supplies are made in a timely manner and no delay has been experienced by any institution. The number of tablets to be supplied are calculated after careful consideration and confirmation of the remaining supplies with the institutions, thus no bias and overestimation is observed by the VVB.

Closed
Table 2. CL from this verification

CL ID	01	Section no.	E.5.2	Date : 17/08/2023
Description of CL				
During the current MP the number of installed units have increased from 9,969 to 9,971 only as compared to last MP. However, usage rate has increased from 93.17% to 96.51%. Please explain the reason considering that the installed units are almost same as previous verification.				
Project participant response				Date : 18/08/2023

The concerned VPAs include two types of chlorination-based water purification systems:

1. UltraFlo (Flo/Inline): a continuous feeding system
2. UltraTAB (Small Pack/Big Pack): a batch feeding system.

Unlike ICS technologies that experience performance loss due to ageing over time, the WPS technologies are not affected by ageing, as the water purification systems operate on consumable modules basis.

When the treatment capacity of consumables (cartridge/tablets) is fully utilized, they are replaced, making the system revive operation again. For example, Chlorination based inline cartridge has a capacity of 720,000 Ltrs. After every 720,000 Ltrs the system is replenished with a new cartridge. This allows a given WPS to continue operating indefinitely with no ageing effect.

Additionally, each institution is approached during universal supply sessions and product usage training sessions. Also, the impact water customer care team actively engages with institutions on a regular basis to monitor the status of system operation. This approach ensures that maintenance and resupply needs are promptly addressed to improve the overall usage rate of the project.

Thus, timely resupply of consumables and proactive engagement with institutions ensures the proper functioning and usage of the systems. This also enables a system to restart operations if it was out of use previously. Therefore, effective resupplies management system of CME results in improvement of the usage rate of project.

Documentation provided by project participant

NA

DOE assessment

Date: 18/08/2023

The usage rate is increased as compared to previous monitoring period, the VVB interviewed the representatives of the institutions and confirmed that the repair& maintenance and supplies are made a timely manner, furthermore the trainings are provided, and a positive adaptation trend of the technology has been observed, thus the justification provided by the CME is found acceptable.

Closed

Table 3. FAR from this verification

FAR ID	01	Section No.	E.5.2	Date : 26/07/2023
Description of FAR				
The PD shall collect the signed confirmation letter of the population from each institution and the same shall be cross-checked by the verifying VVB monitoring period 04 onwards in line with requirement by DEV_425 approval dated 16/06/2023.				
Project participant response				Date : DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD/MM/YYYY
NA				

Appendix 5. List of verified school population for the VVB remote audit samples

No.	Interviewee		WPS technology	Verified No. of Boarding Students	Verified No. of Boarding Staff	Verified No. of Non-Boarding Students	Verified No. of Non-Boarding Staff
	School name	Institution ID					
1.	Oldabach Highschool	K1829960	UltraTab	0	0	150	13
2.	Mogoiywo Primary School	K1817821	UltraTab	0	0	280	12
3.	P.C.E.A Kanyakine Boys Boarding Primary School	K1840135	UltraFlo	406	3	0	28
4.	St Thomas Aquinas Thomeandu Boys Secondary School	K1871270	UltraFlo	680	20	0	8
5.	Kianjiru Primary School	K1871523	UltraFlo	0	0	550	20
6.	Tassel Junior School	K1806110	UltraFlo	0	0	130	20
7.	Kisumu Union Primary School	K1804704	UltraTab	0	0	407	14
8.	Mbirikene Primary School	K1807010	UltraTab	0	0	201	13
9.	Pinus Primary School	K1806891	UltraTab	0	0	368	19
10.	Emitik Girls Secondary School	K1806829	UltraTab	51	7	209	9
11.	Kapsimbeiywo Secondary School	K1807899	UltraTab	0	3	505	21