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	3.0
Completion date of the verification and certification report	25/07/2024
GS ID (s) of VPAs under PoA	VPA ID: GS11259, GS11260, GS11261, GS11262, GS11263, GS11264, GS11265, GS11266, GS11267, GS11268, GS11269, GS11270, GS11271, GS11272, GS11273, GS11274, GS11275, GS11276, GS11277, GS11278, GS11279, GS11280, GS11281, GS11282, GS11283, GS11284, GS11285, GS11286, GS11287, GS11288
Version number of the monitoring report to which this report applies	4.0
Completion date of the monitoring report to which this report applies	23/07/2024
Monitoring period no. and duration	4th 01/01/2023-30/11/2023 (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	Nigeria
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
Amount of annual average GHG emission reductions	1,232,137 tCO_2e

Sustainable Development Goals Targeted	**SDG Impact**	**Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period (01/01/2023 – 30/11/2023)**	**Units/Products**
SDG 13: Climate Action	13.2.1 Amount of CO2e emissions reduced by the project per year	1,232,137	tCO2e (GS 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	19,588	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	95.28%	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	90.57%	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	96.84%	Percentage
SDG 8: Decent Work and Economic Growth	8.5.1Average hourly earnings of female and male employees, by occupation, age and persons with disabilities Indicator: Number of male / females employment created by project	34	Number
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	 Dr. Kaviraj Singh Managing Director		

SECTION A. Executive summary

The programme of activity "Improved Cookstove and Safe Water Programme" aims at the dissemination of improved cookstoves (ICS) and low GHG water purification technologies (WPS) to households, communities, and institutions in Nigeria and Kenya. The VPAs under current verification involves distribution of low GHG Water Purification technologies (WPS) to schools in Nigeria as is permissible under the PoA GS 11189. 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 1.0/08/. The distribution of WPS has provided institutions with safe and clean drinking water and reduced 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: GS11259, GS11260, GS11261, GS11262, GS11263, GS11264, GS11265, GS11266, GS11267, GS11268, GS11269, GS11270, GS11271, GS11272, GS11273, GS11274, GS11275, GS11276, GS11277, GS11278, GS11279, GS11280, GS11281, GS11282, GS11283, GS11284, GS11285, GS11286, GS11287, GS11288.

Total emission reductions for this monitoring period are 1,232,137 tCO_2e.

The PoA has been registered under GS4GG (GS ID: 11189), 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 Activities 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 audit through onsite visit, interviews, and interactions with the representative of the project participant,
- 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" (GSID: 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 dated 01/01/2023-30/11/2023 by GS PoA "Improved Cookstove and Safe Water Programme" (GSID: 11189) amount to 1,232,137 tCO_2e. 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	IR	Panicker	Vishnu	Central Office	Y	Y	Y	Y
2.	GS approved auditor	IR	Mahala	Deepika	Central Office	Y	N	N	Y
3.	Verifier & Technical Expert (TA 3.1)	IR	Panicker	Vishnu	Central Office	Y	Y	Y	Y
4.	Verifier	IR	Sarkar	Rahi	Central Office	Y	N	N	Y
5.	Local Expert	EI	Kumden	Nanbal	Central Office	N	Y	Y	N

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	Guleria	Shifali	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 the CME surveyed sampled WPS. The recorded survey forms by CME were checked by VVB during the site visit observations. The verification team also interviewed the monitoring staff and checked their training records/20/.
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	The surveying and monitoring personnel assigned for PoA implementation have been trained and certified. The interviews conducted during the site visit confirms the regular training is conducted as per the monitoring plan and implementation procedures to reduce the risk of oversight

			minimised. Furthermore, CME has implemented internal QC procedures to ensure prevention of any such potential error in the prepared ER calculation sheet /15/.	or data transfer. All the values in ER calculation sheet have been verified from supporting documents and survey data forms/21,34/. No discrepancies were 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 4.0 dated 23/07/2024. 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. On-site inspection

During the current verification on site visit was conducted for the VPAs GS11259 to GS11288

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 fourth verification of the VPAs under assessment and a physical site visit was undertaken from 19/02/2024-20/02/2024. An RSV was done for the previous monitoring period

Duration of on-site inspection: 19/02/2024 to 20/02/2024				
No.	**Activity performed on-site**	**Site location**	**Date**	**Team member**
1.	Opening Meeting: Introduction, scope and objective of work, roles and responsibilities of audit team, resources required, and timetable of the onsite audit including venue for closing meeting and any concerns from PP.	Nigeria	19/02/2024-20/02/2024	Vishnu Panicker , Nanbal Kumden
2.	Implementation and operation of project activity (project boundary, technology, project equipment, monitoring and metering equipment) as per registered PDD/previous verification.			
3.	Management and monitoring procedures followed at project site.			
4.	Management and operational system: Documentation, allocation of responsibilities, qualification and training, data recording &archiving, internal audit and management review and emergency procedures.			
5.	Interview of Monitoring personnel and end users as per the sampling plan			
6.	Verification checklist: compliance of monitoring procedures followed at project site with registered PDD and monitoring methodology.			
7.	Review of ER calculations in accordance with applied methodology and relevant tools.			
8.	Compilation of the audit findings.			
9.	Closing Meeting: Submission of the audit findings to the client and agreement on the issues raised and agreement on timelines.			

D.3. Interviews

D.3.1. Interviews with CME and VPA Implementers

No.	Interviewee	Date	Subject	

	Last name	First name	Affiliation			Team member
1.	Turgesen	Mark	Impact Water, Nigeria	19/02/2024-20/02/2024	PoA Implementation, Operational and Management Framework, sampling surveys, end-users' feedback, etc. Implementation, Distribution records, database management	Vishnu Panicker , Nanbal Kumden
2.	Sethia	Utkarsh	Impact Water, Nigeria			
3.	Kumar	Ritesh	Climate Secure India Private Limited	19/02/2024-20/02/2024	Methodology application, monitoring plan, sampling method, ER calculations	
4.	Pathania	Rishabh				
5.	Odunaya	Samuel	Impact Carbon (CME)	19/02/2024-20/02/2024	PoA Implementation, Operational and Management Framework, sampling surveys, end-users' feedback, etc.	
6.	Abiodun	Onifade	Enumerator/ Monitoring personnel, (Impact Water)	19/02/2024-20/02/2024	Monitoring system Water quality tests, Monitoring survey training, hygiene campaign, etc.	
7.	Sunday	Oludare				Vishnu Panicker, Nanbal Kumden

Type of questions asked by VVB to VPA Implementers:

a. Role and responsibilities of CME or VPA Implementers in the implementation of PoA
b. Monitoring and implementation process of the PoA
c. Frequency of training conducted for monitoring personnel.
d. Water quality test process
e. How institution received training related to operation of WPS unit?
f. What is annual hygiene campaign and how it is recorded?
g. 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 conducts a brief discussion about hand washing techniques. SMS campaign was conducted in all schools. Schools also celebrate water day and hygiene day under this campaign. Monitoring personnel interviewed during site visit described the monitoring system and how cleanliness and hygiene is maintained while installing the WPS. Data collection procedure followed during monitoring consists of collecting details of school name, address, signature of school representative, unique product ID and other information related to monitoring parameters. The monitoring partners briefed the assessment team on how they conduct the water quality test and training they have received for conducting

water quality test and survey which was found to be in line with the training records and certificates shared by the CME /19,20/.
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	Total population	Type of Institution	Team member
	Name and Designation	School name	Institution ID					
1.	Mrs Owodunni Omotara (Vice Principal)	Titus Jane High School	N1869894	UltraFlo	19/02/2024	17 staffs & 163 students	Non-Boarding	Vishnu Panicker, Kumden Nanbal
2.	Mr Salakonureede (Principal)	Gloria International Nur & Pry. School, Ile Epo	N1832794	UltraFlo	19/02/2024	21 staffs & 185 students	Non-Boarding	Vishnu Panicker, Kumden Nanbal
3.	Mrs. Adeshina (Class teacher)	Obafemi Owode Local Government School Arepo	N1843032	UltraTab	19/02/2024	5 staffs & 188 students	Non-Boarding	Vishnu Panicker, Kumden Nanbal
4.	Ajayi (Head teacher)	Saint Peter Anglican Primary School, Agoro	N1842577	UltraTab	19/02/2024	9 staffs & 405 students	Non-Boarding	Vishnu Panicker, Kumden Nanbal
5.	Orolu Jide (Admin Officer)	Ab & M Prep And Primary School, Jankara	N1864813	UltraFlo	19/02/2024	20 staffs & 140 students	Non-Boarding	Vishnu Panicker, Kumden Nanbal
6.	Mrs Abdullahi. Usman (School secretary)	Caronikky Nursery and Primary School (Olabua Compound), Agege	N1865721	UltraFlo	19/02/2024	19 staffs & 320 students	Non-Boarding	Vishnu Panicker, Kumden Nanbal
7.	Mrs Oleleye. Olucomyi (Assistant Head Teacher)	Saint. John's Catholic Nursery&Primary School 1, Iperu Remo	N1842830	UltraTab	20/02/2024	18 staffs & 558 students	Non-Boarding	Vishnu Panicker, Kumden Nanbal

8.	Mrs. Bamigbaye (Head Teacher)	Ahamadiya Nursery And Primary School, Egbatedo-Odeda	N1843041	UltraFlo	20/02/2024	8 staffs & 125 students	Non-Boarding	Vishnu Panicker, Kumden Nanbal
9.	Mrs Abioye (Vice Principle)	Iba Community High School	N1838282	UltraTab	20/02/2024	17 staffs &117 students	Non-Boarding	Vishnu Panicker, Kumden Nanbal
10.	Mrs. Olagunju (Head teacher)	L.A primary school Ajara	N1826992	UltraTab	20/02/2024	5 staffs & 129 students	Non-Boarding	Vishnu Panicker, Kumden Nanbal
11.	Mrs Lebi A.I (Teacher)	St. Peters Ang. Pry. School Oke Apata	N1875790	UltraTab	20/02/2024	6 staffs &120 students	Non-Boarding	Vishnu Panicker, Kumden Nanbal

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 site visit 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.

Furthermore, the VVB didn't observe any discrepancy in the school population during the onsite visit by conducting interviews with the school representatives when compared with the CME's survey results.

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 /13/ 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 30 VPAs within the boundaries of PoA geographical location Nigeria. 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, 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, prescribes minimum sample size and acceptance number for discrepant values. Applying para 30 and 31 of the standard, verification will require 11 samples to be covered in order to verify the CME's sampling plan /13/.

The current verification is for VPA ID: GS11259, GS11260, GS11261, GS11262, GS11263, GS11264, GS11265, GS11266, GS11267, GS11268, GS11269, GS11270, GS11271, GS11272, GS11273, GS11274, GS11275, GS11276, GS11277, GS11278, GS11279, GS11280, GS11281, GS11282, GS11283, GS11284, GS11285, GS11286, GS11287, GS11288. The CME has applied across VPA sampling. The VVB has also applied the across VPA sampling.

The verification team has selected the sample size as 11 institutions and 4 institutions in extra as backup for the purpose of on-site inspection to check the acceptability of CME's sampling results or otherwise. VVB has taken 2 back up samples for each of the technology due to chances of unavailability of the school representatives during the site visit.

Sample size: per region

VPA Ref no.	AQL	UQL	Producer risk	Consumer risk	Sample size; min	Acceptance no.
GS11259, GS11260, GS11261, GS11262, GS11263, GS11264, GS11265, GS11266, GS11267, GS11268, GS11269, GS11270, GS11271, GS11272, GS11273, GS11274, GS11275, GS11276, GS11277, GS11278, GS11279, GS11280, GS11281, GS11282, GS11283, GS11284, GS11285, GS11286, GS11287, GS11288	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	8,077	5
Ultra-Tab	11,511	6

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 to determine if the CME's sample records meet the requirements. Prior to the Onsite visit, VVB applied randomizer in the monitoring data and generated the random numbers for the required 11 samples (5 of Ultra-Flo WPS unit type and 6 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.
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.
All the 11 main institutions sampled for are covered during the Onsite Audit. During the interviews with end-users, all the details and were found correct and no discrepancies were observed in the monitoring data.

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	-	-	FAR 01
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	-	-	-
Comparison of monitored parameters with last monitoring period	-	-	-
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(from GS performance review, documents required, TR comments)	02	00	FAR 01 FAR 02
Total	02	00	03

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 raised by GS4GG performance review for MP 02 /42/, were addressed during the current assessment period. For details, please refer Appendix 4 for this report.
FAR#02 and FAR#03 due to deviation sought /26/ was raised and the same is mentioned under section B.1.1 of the Monitoring report and addressed as FAR#02 and FAR#03 under appendix 4.

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
GS11259: Improved Cookstove and Safe Water Programme – Nigeria – VPA 01.	Yes	10/06/2022	5.0
GS11260: Improved Cookstove and Safe Water Programme – Nigeria – VPA 02.	Yes	10/06/2022	5.0
GS11261: Improved Cookstove and Safe Water Programme – Nigeria – VPA 03.	Yes	10/06/2022	5.0
GS11262: Improved Cookstove and Safe Water Programme – Nigeria – VPA 04.	Yes	10/06/2022	5.0
GS11263: Improved Cookstove and Safe Water Programme – Nigeria – VPA 05.	Yes	10/06/2022	5.0
GS11264: Improved Cookstove and Safe Water Programme – Nigeria – VPA 06.	Yes	10/06/2022	5.0
GS11265: Improved Cookstove and Safe Water Programme – Nigeria – VPA 07.	Yes	10/06/2022	5.0
GS11266: Improved Cookstove and Safe Water Programme – Nigeria – VPA 08.	Yes	10/06/2022	5.0
GS11267: Improved Cookstove and Safe Water Programme – Nigeria – VPA 09.	Yes	10/06/2022	5.0

GS11268: Improved Cookstove and Safe Water Programme –Nigeria – VPA 10.	Yes	10/06/2022	5.0
GS11269: Improved Cookstove and Safe Water Programme – Nigeria – VPA 11.	Yes	10/06/2022	5.0
GS11270: Improved Cookstove and Safe Water Programme – Nigeria – VPA 12.	Yes	10/06/2022	5.0
GS11271: Improved Cookstove and Safe Water Programme – Nigeria – VPA 13.	Yes	10/06/2022	5.0
GS11272: Improved Cookstove and Safe Water Programme – Nigeria – VPA 14.	Yes	10/06/2022	5.0
GS11273: Improved Cookstove and Safe Water Programme – Nigeria – VPA 15.	Yes	10/06/2022	5.0
GS11274: Improved Cookstove and Safe Water Programme – Nigeria – VPA 16.	Yes	10/06/2022	5.0
GS11275: Improved Cookstove and Safe Water Programme – Nigeria – VPA 17.	Yes	10/06/2022	5.0
GS11276: Improved Cookstove and Safe Water Programme – Nigeria – VPA 18.	Yes	10/06/2022	5.0
GS11277: Improved Cookstove and Safe Water Programme – Nigeria – VPA 19.	Yes	10/06/2022	5.0
GS11278: Improved Cookstove and Safe Water Programme – Nigeria – VPA 20.	Yes	10/06/2022	5.0
GS11279: Improved Cookstove and Safe Water Programme – Nigeria – VPA 21.	Yes	10/06/2022	5.0
GS11280: Improved Cookstove and Safe Water Programme – Nigeria – VPA 22.	Yes	10/06/2022	5.0
GS11281: Improved Cookstove and Safe Water Programme – Nigeria – VPA 23.	Yes	10/06/2022	5.0
GS11282: Improved Cookstove and Safe Water Programme – Nigeria – VPA 24.	Yes	10/06/2022	5.0
GS11283: Improved Cookstove and Safe Water Programme – Nigeria – VPA 25.	Yes	10/06/2022	5.0
GS11284: Improved Cookstove and Safe Water Programme – Nigeria – VPA 26.	Yes	10/06/2022	5.0
GS11285: Improved Cookstove and Safe Water Programme – Nigeria – VPA 27.	Yes	10/06/2022	5.0
GS11286: Improved Cookstove and Safe Water Programme – Nigeria – VPA 28.	Yes	10/06/2022	5.0
GS 11287: Improved Cookstove and Safe Water Programme – Nigeria – VPA 29.	Yes	10/06/2022	5.0
GS11288: Improved Cookstove and Safe Water Programme – Nigeria – VPA 30	Yes	10/06/2022	5.0

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 to provide safe and clean drinking water through dissemination of low GHG water purification technologies (WPS) to schools and other institutions in Nigeria. The monitoring period covered under this verification is 01/01/2023-30/11/2023 (Inclusive of both days). The implementation of the PoA has led to reduced GHG emissions caused using non-renewable biomass/ fossil fuel for boiling water. It has also helped to reduce the incidence of

waterborne and IAP related illness alongside providing clean water to schools. The baseline study showed that the piped water can only be accessed by 11.7% of the total population of Nigeria. Only 4.71% of the schools/institutions has access to safe water derived from improved water sources or from water treatment method other than boiling /16/ Therefore, installation of WPS under the current PoA has provided access to safe water to larger population in schools and other institutions of Nigeria. All the VPAs selected under PoA are within the boundaries of PoA location i.e., Nigeria. The VPAs covered by the PoA under this monitoring period are VPA 01 to VPA 30 corresponding to its GSID, GS11259 to GS11288.

The PoA meets the eligibility criteria of the Gold Standard and has applied 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)

II. Chlorination (UltraTab)

The technical specifications /18/ of the WPS distributed under the VPAs is provided in the table below:

Description	UltraFlo	UltraTab
Application	Piped water	Un-piped water
Flow rate	20 litres /min	1 tablet treats 100 liters
Capacity/lifespan	Expiry: 5 years FLO:340,000 litres Inline:720,000 L	Expiry: 5 years Capacity: Big pack: 48,000 litres Small pack: 10,000 liters
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 Onsite visit, 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 100 liters and a Small UltraTAB pack is standardized at 10 strips of 10 tablets each, rendering the capacity of Small Pack UltraTAB pack as 10,000 liters and big pack: 48,000 liters 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 Onsite visit and through as well as 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 site-visit 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 interviewing 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 shared by CME were verified during the onsite visit/27/ and are 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/, onsite observations and interview conducted during the Onsite visit, 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/.

An Onsite visit was conducted by the verification team; 11 WPS were surveyed. The uniqueness of the system is identified from UID written on the installed units. The details of the WPS were verified from the

	distribution database/28/ which was cross checked with their corresponding purchase orders/29/ for all 11 WPS samples. The emission reductions being claimed during this monitoring period are lesser than the estimated emission reductions for the comparable period as per the VPA-DDs/10/, as is 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 is 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 the Onsite visit. 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 on the basis of review of supporting documents (as listed in Appendix 3), and the interviews conducted with the CME representatives, project personnel, and end-users as a part of the Onsite visit. 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 start date of the project activity is 01/01/2021 as per the VPA-DD /10/ which is also the start date of the operation. The crediting period is from 01/01/2021 to 31/12/2025 which is of total 5 years. The monitoring period for this verification is 01/01/2023 to 30/11/2023 (inclusive of both days). Achieved emission reductions are 1,232,137 tCO_2e for the current MP. The emission reduction calculation sheet was reviewed /15/ and it was verified that 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	No findings were raised.
Conclusion	Based on the review of the monitoring report, PoA-DD, VPA-DD, installation database and Onsite visit interviews conducted with the CME, VPA Implementers and end-users, the verification team found that: a) The VPAs are implemented within the boundaries of the PoA i.e., Nigeria 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-DD.

	d) The monitoring and implementation process is in line to the VPA-DD, 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 01/01/2023-30/11/2023 (inclusive of both days). f) Achieved ERs are lower than the estimated ERs for the comparable monitoring period 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 was confirmed during the 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 to effectively monitor the emission reductions of each VPA in accordance with the monitoring plan in the VPA-DD/10/. Training records are being maintained by the Program Manager who 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. 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 has confirmed during the Onsite visit that the distributed WPS units have Unique product ID. 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 line 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 PoA aims to provide safe drinking water to the institutions in Nigeria. 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 30 VPAs- VPA GS 11259- GS 11288 in Nigeria.

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)	MoV
Institution/School Institution/School	Chlorination: This uses activated chlorine to kill pathogens in water	UltraFlo	8,077	The total number of UltraFlo distributed by the end of the monitoring period is 8,077 which is verified from the installation database provided in the ER sheet /15/.
		UltraTab	11,511	The total number of UltraTab distributed by the end of the monitoring period is 11,511 which is verified from the installation database provided in the ER sheet /15/.

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 litres Small pack: 10,000 litres	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		
GS11259	12/01/2018	01/01/2021-31/12/2025	593	34	54,275	41,498
GS11260	04/09/2018	01/01/2021-31/12/2025	612	0	54,275	41,549
GS11261	01/01/2019	01/01/2021-31/12/2025	614	0	54,275	40,129
GS11262	20/02/2019	01/01/2021-31/12/2025	412	203	54,275	39,433
GS11263	25/04/2019	01/01/2021-31/12/2025	507	119	54,275	47,626
GS11264	02/07/2019	01/01/2021-31/12/2025	305	342	54,275	35,313
GS11265	23/05/2019	01/01/2021-31/12/2025	251	388	54,275	54,274
GS11266	10/06/2019	01/01/2021-31/12/2025	185	451	54,275	43,602
GS11267	18/06/2019	01/01/2021-31/12/2025	318	324	54,275	40,477
GS11268	09/07/2019	01/01/2021-31/12/2025	179	482	54,275	42,953
GS11269	31/07/2019	01/01/2021-31/12/2025	87	563	54,275	41,059

GS11270	07/08/2019	01/01/2021-31/12/2025	361	273	54,275	44,205	
GS11271	03/09/2019	01/01/2021-31/12/2025	154	564	54,275	35,676	
GS11272	04/10/2019	01/01/2021-31/12/2025	16	555	54,275	40,235	
GS11273	11/10/2019	01/01/2021-31/12/2025	16	619	54,275	44,260	
GS11274	16/10/2019	01/01/2021-31/12/2025	27	599	54,275	40,844	
GS11275	18/10/2019	01/01/2021-31/12/2025	10	645	54,275	41,145	
GS11276	19/09/2019	01/01/2021-31/12/2025	12	662	54,275	42,367	
GS11277	23/10/2019	01/01/2021-31/12/2025	20	656	54,275	41,882	
GS11278	25/10/2019	01/01/2021-31/12/2025	78	573	54,275	43,447	
GS11279	06/11/2019	01/01/2021-31/12/2025	261	399	54,275	50,716	
GS11280	04/12/2019	01/01/2021-31/12/2025	98	578	54,275	44,221	
GS11281	24/09/2019	01/01/2021-31/12/2025	27	642	54,275	40,647	
GS11282	14/12/2019	01/01/2021-31/12/2025	9	881	54,275	38,062	
GS11283	07/01/2020	01/01/2021-31/12/2025	617	30	54,275	40,047	
GS11284	16/01/2020	01/01/2021-31/12/2025	617	9	54,275	37,706	
GS11285	28/01/2020	01/01/2021-31/12/2025	589	39	54,275	39,599	
GS11286	06/02/2020	01/01/2021-31/12/2025	390	489	54,275	33,528	
GS11287	05/01/2019	01/01/2021-31/12/2025	387	72	54,275	27,072	
GS11288	21/01/2020	01/01/2021-31/12/2025	325	320	54,275	38,565	
Total WPS installed			8,077	11,511	1,628,250	1,232,137	
	As checked from the delivery notes/31/	Checked from the GS website	Checked from the sales database /28/	Checked from sales database/ 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 screenshots of salesforce database/28/.

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. 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 Onsite visit survey conducted for the current issuance request, as well as, during the on-site audit survey conducted for previous batches, 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 Onsite visit 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 Onsite visit 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 has 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 interviews of the sampled institutions' representatives during the Onsite visit.
Findings	No findings were raised
Conclusion	a) The verification team is of the opinion that physical features of the VPAs 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 the Onsite visit survey and review of the supporting documentation that physical features of the component VPAs have been implemented in accordance with the VPA-DDs /10/. d) The VPAs was also found to be completely operational in line with the VPA-DDs /10/.

	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.1.1 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:

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).

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 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 Nigeria 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 Nigeria thereby replacing the baseline method of boiling of water for consumptions. The parameter refers to % Users reporting safe water quality in baseline. Thus, CME assumes the parameter value to be 4.71, however 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 declared 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.

$AAC_{Baseline}$ Affordable and Clean Energy

SDG Indicator	7
Means of verification	The PoA distributed WPS to the institutions of Nigeria 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 Nigeria 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 and hence there was no employment. 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

<table>
<tr><td>Means of verification</td><td>The value for this parameter has been verified from the Manufacturer's specifications /18/.

<table><tr><td>Description</td><td>UltraFLO</td><td>UltraTAB</td></tr><tr><td>Manufacturer</td><td>Medentech</td><td>Medentech</td></tr><tr><td>Product Name</td><td>UltraFLO
UltraFLO (Inline)</td><td>Big Pack,
Small Pack</td></tr><tr><td>Technology type</td><td>Chlorination</td><td>Chlorination</td></tr><tr><td>Performance classification</td><td>Complies with National standard</td><td>Complies with National standard</td></tr></table>
The evidence /18/ shared by the CME has been reviewed and it was found that project technological description is correctly reported in monitoring report /5/.</td></tr>
<tr><td>Findings</td><td>No findings were raised.</td></tr>
<tr><td>Conclusion</td><td>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.</td></tr>
</table>

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 Nigeria

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 such as National Action Plan (NAP), National Water Resources Bill- 2020, and Nigerian Standard for Drinking Water Quality (NSDQW).
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 activity, Improved and Unimproved drinking water sources in Nigeria

<table>
<tr><td>SDG Indicator</td><td>13</td></tr>
<tr><td>Means of verification</td><td>Baseline survey of Schools

<table><tr><td>S.No</td><td>Drinking water source</td><td>% Premises</td></tr><tr><td>1.</td><td>Government/ Private piped connection</td><td>3.53</td></tr><tr><td>2.</td><td>Surface water</td><td>2.35</td></tr><tr><td>3.</td><td>Well, /Borehole</td><td>94.12</td></tr></table>
The value for this parameter is different for improved and unimproved drinking water sources in Nigeria. 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.

<table><tr><td>S.No.</td><td>Source of drinking water</td><td>% Premises</td></tr></table></td></tr>
</table>

	1.	Improved sources	97.65%
	2.	Unimproved Sources	2.35%
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-users 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 | 58.02 2 | Traditional Charcoal Pot | 40.74 3 | Kerosene Stove | 1.23 Stove technologies used in the project boundary was found to be traditional 3 stone stoves, charcoal pots, or kerosene stove. 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-DDs /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 (Litres)	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	30 years	30 years
Findings	No findings were raised.		
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the VPA-DDs /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:

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/. S.no | Baseline Fuel Usage | School/Institutions (%) 1. | Wood fuel | 58.02 2. | Charcoal | 40.74 3. | Kerosene | 1.23
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.

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

SDG Indicator	13
Means of verification	Following are the values applied under this parameter. Wood = 112 tCO_2/TJ Charcoal = 165.22 tCO_2/TJ (includes charcoal production emissions) The value for this parameter is sourced from IPC 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.

$EF_{b, f, nonCO2}$,Non-CO_2 emission factor from use of fuels, in case the baseline fuel is biomass or charcoal

SDG Indicator	13
Means of verification	Following are the values applied under this parameter AR5 GWP - Wood: 9.46 tCO_2e/TJ - Charcoal: 44.83 tCO_2e/TJ (includes production emissions of CH4 and N2O) The value for this parameter is sourced from IPC 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-DDs /10/. The value applied is correct and justified.

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

SDG Indicator	13
Means of verification	The parameter calculates the weighted average of the baseline water boiling devices. S.no | Stove Technology | School/Institutions (%) 1 | Traditional / 3 Stone Fire | 58.02 2 | Traditional Charcoal Pot | 40.74 3 | Kerosene Stove | 1.23

	<table><tr><td></td><td></td><td></td></tr><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>15</td></tr><tr><td>3</td><td>Kerosene Stove</td><td>50</td></tr></table> The value 12.53% used for calculation has been sourced from baseline survey data /23/.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the VPA-DDs /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 4.71% 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 form baseline survey data /23/.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the VPA-DDs /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. <table><tr><td>Description</td><td>UltraFLO</td><td>UltraTAB</td></tr><tr><td>Dosage rate (Treatment Capacity (Ltrs))</td><td>FLO:340,000L/ Cartridge Inline: 720,000L/Cartridge</td><td>Big Pack: 48,000 L/ Tab Pack Small Pack: 10,000 L/ Tab Pack</td></tr></table> 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-DDs /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 82.30% which is confirmed from the FRA 2020 Nigeria and UN data shared by CME /25/. Even though fNRB value is ex-ante parameter and is fixed for the entire crediting period. Based on reviewer's feedback PP has discarded the C4 Ecosolutions report, based on which the value for fnrb was established, with the revised value taken from the recently design certified VPAs (i.e., GS 12390 to GS 12420) of the same PoA which follows the Tool 30 Version 4.0. This

	revision has led to the revised fNRB value of 82.30% and CME has reduced the ERs by 12%. Hence the revised value is acceptable by VVB as it is more conservative and recent value which has been accepted by SustainCERT.
Findings	No findings were raised.
Conclusion	The value in the monitoring report /5/ and ER calculation sheet /15/ are consistent with the VPA-DDs /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-DDs /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?	19,588 The verification team confirmed the value from installation database provide in Installation database of ER sheet and found it 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.
	VVBs the data management ensure correct transfer of data and reporting	NA

	of emission reductions and are necessary QA/QC processes in place?	
	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 /9, 10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/9,10/.	

$IH_{Project}$ % 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?	95.28% 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 Onsite visit (11 samples) confirmed that none of school staff or students reported cases of diarrhoea and water borne diseases and provided their positive feedback to the WPS technology installed at the school. The information was found to be consistent between the CME survey and the VVB survey.
	VVBs 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 /9, 10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/9, 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?	95.28% 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/21,34/ and found to be consistent with the survey results were presented in ER sheet (monitoring survey)/15/.
	VVBs 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 34 personnel that has been trained to conduct monitoring surveys and water quality test. Training records and certificates 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 /9,10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/9,10/.	

$AAC_{Project}$ 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?	96.84% 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/.
	VVBs 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 /9, 10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/9, 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 34. 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 /36//.
	VVBs 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 /9, 10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/9, 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?	0.9840 The value of this parameter is obtained 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. Institution heads interviewed and it is confirmed that representative from VPA Implementers had visited recently to collect water sample. This was cross-checked from the photographic evidence of sampled data /21/ submitted for the verification.
	VVBs 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 /9, 10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/9, 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?	128 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. 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 Onsite visit (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.
	VVBs 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 /9, 10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/9, 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 value applied for the parameter is 0. 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 by the VVB 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.
	VVBs 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 /9, 10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/9, 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	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?	411 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 onsite visit through interviews with the head of the institutions and found correct. Sales Force population statements for each premises monitored by CME were reviewed by the verification team and lastly the population of some non-monitored samples listed in Installation database was randomly cross checked in CME's Central Database and the corresponding population were found consistent with the values reported in ER sheet tab Installation database. Thus the verification team confirms that value reported in the ER sheet is correct. VVB reviewed and confirmed that attendance consideration is not deemed mandated either by the applied methodology or the registered Monitoring

		Plan for the parameter HNp,y. But CME decided to conduct a detailed assessment of absentee with the help of the latest national level reports available that is prevailing in the country. VVB's verification team further looked into the 2015 Nigeria Education Data Survey for studying the absenteeism in Nigeria and further to cross check the sourced value by the PD. the data from NEDS 2015 has been complemented by Nigeria Digest of Education Statistics, 2019 (NDES, 2019), to arrive at annual average % absenteeism in schools in Nigeria. Given the most recent data available is of 2015, the data used by CME is acceptable. PD has included the tab "Absenteeism data" in the ER sheet to consider the Weighted average of Missed school days per year, thereby discount factor been applied to the monitored population of project institutions, adjusting it for absenteeism. Thus, the discount factor for absenteeism determined has been reported in the MR under parameter table "HNp,y" and shall remain fixed till the end of the crediting period. This was found acceptable by the VVB.
	VVBs 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 /9, 10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/9, 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?	19,588 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.
	VVBs 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 34 personnel that has been trained to conduct monitoring surveys and water quality test. Training records and 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 /9, 10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/9, 10/.	

$U_{p,y}$ 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?	96.84 % 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 the details were 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 by the VVB 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.
	VVBs 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 /9, 10/ and applied methodology /8/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/9,10/.	

$DP_{p,y}$ 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 169 , excluding weekends, holidays and term-breaks, as applicable for boarding and non-boarding premises. The school academic calendar/32/ for Nigeria 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.
	VVBs 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/.	

$DN_{p,y}$ 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 interviewed about the total number of units installed in each school and their response was cross-checked from the installation database provided in ER calculation sheet /15/.
	VVBs 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
$ABS_{Project}$	19,588	18,908
$IH_{Project}$	95.28	93.51
$SWQ_{Project}$	95.28	93.51
$AAC_{Project}$	96.84	95.94
QE $IG_{Project}$	34	18
$M_{q,y}$	0.9840	0.9747
Water hygiene education campaigns	128 samples monitored	123 samples monitored
$X_{cleanboil,y}$	0%	0%
$HN_{p,y}$	411	410
$N_{p,y}$	19,588	18,908
$U_{p,y}$	96.84	95.94
$DP_{p,y}$	169	82
DNp,y	1.101	1.109

Findings

Conclusion

This is the fourth monitoring period of verification of 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 /13/ 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 30 VPAs covered under this PoA. 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.

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.

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 reduce 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
$HN_{p,y}$	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 Nigeria. All the VPAs i.e., GS11259 to GS11288 (VPA 01 to VPA 30) is implemented in the same physical location of Nigeria 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 30VPAs 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://platform.sustain-cert.com/public-project/2487 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 reviving 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. In accordance with the FAR from deviation, For the current monitoring period the Surveys and Water Quality Tests were conducted from 28/03/2023 to 16/10/2023 /21/. During the previous monitoring period i.e., MP 3, the monitoring was conducted from 02/02/2023 to 21/02/2023 /39/, therefore no gap was observed. 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	No findings were raised
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 /13/ 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	4.71
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	VERs	1,232,137

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 (tCO_2e/L)
SEw,b,y = Specific energy required to boil water (KJ/L), to be calculated as per the paragraph below
xf = Proportion of fuel f used in the baseline (fraction determined based on an energy basis)
$EF_{b,f,CO2}$ = CO2 emission factor from use of fuel f (tCO_2/TJ)

$EF_{b,f,nonCO2}$ = non-CO2 emission factor arising from use of fuel f, when the baseline fuel f is biomass or charcoal (tCO_2e/TJ). This parameter is omitted when f is a fossil fuel.
$f_{NRB,f,y}$ = Fractional non-renewability status of woody biomass fuel during year y (fraction). For biomass, it is the fraction of woody biomass that can be established as non-renewable. This parameter is omitted when f is a fossil fuel.
f = Index for baseline fuel

Calculations of specific energy required to boil water using the baseline technology (SEw,b,y) is as follows:

$S_{E\text{w,b,y}}$ = 360.83/ηwb
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:

$BE_{\text{y}} = EF_{\text{b}} \times (1 - C\text{b} - X_{\text{cleanboil,y}}) \times Q_{\text{y}} \times M_{\text{q,y}}$
Where:
BE_{y} = Baseline emissions from the use of fuel to obtain safe water in the baseline (tCO_2e)
Cb = Proportion of project end-users who in the baseline were already using a safe water supply that did not require boiling (%)
Xcleanboil,y = Proportion of project end-users that boil safe water in the project year y (%)

Q_{y} = Quantity of safe drinking water provided by the project in year y (L)
$M_{\text{q,y}}$ = Modifier for the water quality in year y

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

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

Where:
Np.y = Number of premises type p with at least one project technology in year y
Up,y = Usage rate of the project technology by premises type p during year y (%)
QPWhh,p,y = Volume of drinking water per premises p per day in year y (L)
DPp,y = Days the project technology is present for end-users in the premises p in year y

The volume of drinking water per premises 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:

$QPW_{\text{hh,p,y}} = \min((q\text{i} \times DN_{\text{p,y}}), (QPW_{\text{p}} \times HN_{\text{p,y}}))$
Where:
qi = Capacity of the HWT or IWT individual project technology (L)
$DN_{\text{p,y}}$ = Average number of individual project technologies in each project premises type p in year y
$HN_{\text{p,y}}$ = 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 that. 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	19,588
SDG 3	Good Health and Well-Being	% Of users reporting reduction in incidence of diarrhoea and water borne diseases etc. in project (improved health)	95.28%
SDG 6	Clean Water and Sanitation	% Users reporting safe water quality in project	95.28%
SDG 7	Affordable and Clean Energy	Access to affordable and clean energy (% of operating WPS units under Project)	96.84%
SDG 8	Decent Work and Economic Growth	Quantitative Employment and income generation (Number of person (male and female) hired under Project)	34
SDG 13	Climate Action	ERs	0

	For SDG 13. Climate Action, the project estimate is 0 as the project technology involves chlorination which VVBs 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	19,588	19,588
3	Good Health and Well Being	0	95.28%	95.28%
6	Clean Water and Sanitation	4.71	95.28%	90.57%
7	Affordable and Clean Energy	0	96.84%	96.84%
8	Decent Work and Economic Growth	0	34	34
13	Climate Action	1,232,137tCO2e	0	1,232,137tCO2e

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)
Findings	No findings were raised.
Conclusion	The verification team verified that. a) The complete data was available and is duly reported. b) 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. c) Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals, project emissions and leakage emissions were followed. d) The total number of ERs achieved during the current monitoring period is 1,232,137tCO2e

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/.

SDG	Values estimated in ex-ante calculation of approved PDD for this monitoring period (tCO2e)	Actual values achieved during this monitoring period (tCO2e)
13-GS11259	54,275	41,498
13-GS11260	54,275	41,549
13-GS11261	54,275	40,129
13-GS11262	54,275	39,433
13-GS11263	54,275	47,626
13-GS11264	54,275	35,313
13-GS11265	54,275	54,274
13-GS11266	54,275	43,602
13-GS11267	54,275	40,477
13-GS11268	54,275	42,953
13-GS11269	54,275	41,059
13-GS11270	54,275	44,205
13-GS11271	54,275	35,676
13-GS11272	54,275	40,235
13-GS11273	54,275	44,260
13-GS11274	54,275	40,844
13-GS11275	54,275	41,145
13-GS11276	54,275	42,367
13-GS11277	54,275	41,882
13-GS11278	54,275	43,447
13-GS11279	54,275	50,716
13-GS11280	54,275	44,221
13-GS11281	54,275	40,647
13-GS11282	54,275	38,062

	13-GS11283	54,275	40,047
	13-GS11284	54,275	37,706
	13-GS11285	54,275	39,599
	13-GS11286	54,275	33,528
	13-GS11287	54,275	27,072
	13-GS11288	54,275	38,565
	Total	**1,628,250**	**1,232,137**

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**
01/01/2023-30/11/2023	1,232,137tCO_2e

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 1,232,137tCO_2e.

E.9. Safeguarding principles

Means of verification	There was no safeguarding principle assessed 'Yes' or 'Potentially' and added to this monitoring plan.
Findings	No findings were raised.
Conclusion	Not applicable.

E.10. Stakeholder Inputs and Legal Disputes

Means of verification	During the current monitoring period only one inputs/ grievances were received via phone call, which is consistently reported under section G.1 of the MR and the grievance report for the current MP/40/, VVB confirmed that the system under breakdown was taken into accounting for ER calculation/15/. CME collects feedback on a regular basis and during the on-site survey with end-users no further issues were identified. PD confirmed in section G.3 of the MR that the activity 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. There were no legal disputes with respect to the project activity.
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 Book/40/ is part of the project implementation and has been made

	available at office of Impact Water in Nigeria. The stakeholder also has the option of contacting the CME via post or email to details provided below: **Impact Carbon Nigeria** Global Impact H20 Innovations, Ltd. Plot 61, Adekunle Fajuyi Street, G.R.A. Ikeja, Lagos Nigeria. GS Contact (mandatory): help@goldstandard.org Contact no.: +256 790 911 934 Email: info@impactcarbon.org
Findings	No findings were raised.
Conclusion	The validation team confirms that the PoA receives no negative feedback on the WPS units distributed to institutions. The validation 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 Nigeria. 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 fourth monitoring period 01/01/2023 – 30/11/2023 (Inclusive of both days) as reported in the Monitoring Report, version 4.0 dated 23/07/2024.
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 1.0/8/.

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 4.0 dated 23/07/2024 and corresponding ER calculation sheets for the monitoring period 01/01/2023-30/11/2023 which is amounting to 1,232,137tCO_2e.

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 fourth monitoring period 01/01/2023-30/11/2023 (Inclusive of both days) as reported in the Monitoring Report, version 4.0 dated 23/07/2024

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 01/01/2023-30/11/2023 (Inclusive of both days) are fairly stated in the Monitoring Report, version 4.0 dated 23/07/2024. 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 01/01/2023-30/11/2023 has achieved emission reductions amount to 1,232,137tCO_2e.

Verified and certified emission reductions as per commitment period:

Commitment period	Amount achieved
01/01/2023-30/11/2023	1,232,137tCO2e

		Amount Achieved					
Start Dates	End Dates	VERs (tCO_2e)	ABS (SDG1)	IH (SDG3)	SWQ (SDG6)	AACS (SDG7)	QE IG (SDG8)
01/01/2023	30/11/2023	1,232,137	19,588	95.28%	90.57%	96.84%	34

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
CO2	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
TcO2e	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	Vishnu S Panicker		
Education	M.Sc (Sustainable Development and Environment Management) B.Sc (Forestry)		
Experience	1+ years		
Field	Forestry and Environment		
Approved Roles			
Team Leader	Yes (VM)		
Validator	Yes (VM)		
Verifier	Yes (VM)		
Local expert	Yes (India)		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	Yes (VM TA 1.2, 3.1)		
Reviewed by	Shifali Guleria, Quality Manager	**Date**	09/06/2023
Approved by	Deepika Mahala, Technical Manager	**Date**	09/06/2023

Competence Statement			
Name	Rahi Sarkar		
Education	M.Sc. Ecology and Environmental Studies B.Sc. Forestry		
Experience	NA		
Field	NA		
Approved Roles			
Team Leader	NO		
Validator	NO		
Verifier	NO		
Methodology Expert	NO		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	NO		
Trainee	YES		
Reviewed by	Shifali Guleria (Quality Manager)	**Date**	31/10/2022
Approved by	Deepika Mahala (Technical Manager)	**Date**	31/10/2022

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	Kumden Nanbal Luka		
Country	Nigeria		
Education	B.tech. in Urban and Regional Planning		
Experience	1+ years		
Field	Environment; Urban-Rural planning		
Approved Roles			
Team Leader	No		
Validator	No		
Verifier	No		
Methodology Expert	No		
Local expert	Yes (Nigeria)		
Financial Expert	No		
Technical Reviewer	No		
TA Expert	No		
Reviewed by	Shreya Garg	**Date**	23/11/2018
Approved by	Anshika Gupta	**Date**	23/11/2018

Competence Statement			
Name	Shifali Guleria		
Education	M.Sc. (Environmental Studies and Resource Management), TERI University		
Experience	3+ year		
Field	Climate Change		
Approved Roles			
Team Leader	YES		
Validator	YES		
Verifier	YES		
Methodology Expert	YES (AMS-I.A., AMS-II.G., AMS-II.E., AMS-III.A.V., AMS-I.D, ACM0002)		
Local expert	YES		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (1.2, 3.1)		
Reviewed by	Deepika Mahala	**Date**	18/02/2022
Approved by	Ashok Gautam	**Date**	18/02/2022

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 Body Requirements	Version 2.0	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 4.0 dated: 23/07/2024	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 GS11259, GS11260, GS11261, GS11262, GS11263, GS11264, GS11265, GS11266, GS11267, GS11268, GS11269, GS11270, GS11271, GS11272, GS11273, GS11274, GS11275, GS11276, GS11277, GS11278, GS11279, GS11280, GS11281, GS11282, GS11283, GS11284, GS11285, GS11286, GS11287, GS11288	Version 5.0 dated 18/05/2022	CME
11	GS	GS Programme of Activities 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	VVB	VVB audit records	-	Others
15	CME	ER calculation sheet	version 4.0 dated: 23/07/2024	CME
16	CME	Table 2.1.1, Nigeria Demographic and Health Survey 2018, Report	October 2019	CME
17	CME	Nigeria Multiple Indicator Cluster Survey 2016-17	February 2018	CME
18	Medentech	Manufacturer's specifications documents	13/05/2021	CME
19	CME	WQT Training certificates	16/03/2023, 18/05/2023,	CME

			20/07/2023, 12/09/2023	
20	CME	Training attendance records	-	CME
21	CME	Filled Monitoring survey forms	28/03/2023 to 19/04/2023 30/05/2023 to 27/06/2023 27/07/2023 to 09/08/2023 04/10/2023 to 16/10/2023	CME
22	CME	Hygiene Awareness Campaign Report	January – November 2023	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	UN	FRA 2020 Nigeria and UN data. Calculations of the fraction of non-renewable biomass (f_{NRB}) Nigeria	-	CME
26	GS	Deviation request form	07/12/2021	CME
27	Google	Google maps	-	Other
28	CME	WPS Installation Database	-	CME
29	CME	Purchase order	-	CME
30	GS	Deviation request form (DEV_425)	16/06/2023	CME
31	GS	Deviation request form (DEV_387)	02/05/2023	CME
32	CME	School academic calendar	-	CME
33	CME	Photo of UID on WPS unit	-	CME
34	CME	Photo of water quality test	-	CME
35	CME	VPA implementer and CME contract	30/06/2021	CME
36	VPA Implementer	Statement of Employees at Impact Water	21/06/2023	VPA Implementer
37	CME	Random number generator screenshots	-	CME
38	GS	Performance Review MP 3	01/07/2022 to 31/12/2022	CME
39	CME	Verification report for MP 3 (01/07/2022 to 31/12/2022)	Version: 1.0 Dated:21/08/2023	Others
40	CME	Grievance Mechanism records	-	CME
41	GS	Site visit and Onsite visit Requirements and procedures	Version 2.0 Dated: 30/05/2023	Others
42	GS	Performance Review MP 2	01/01/2022 to 30/06/2022	CME
43	CDM	Tool 30: Calculation of the fraction of non-renewable biomass	Version 4.0	Other

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

Table 1. Remaining FAR from GS4GG Performance Review MP2

FAR ID	01	**Section no.**	D.2	**Date :** 08/03/2024
Description of FAR				
During the next monitoring period and subsequent monitoring periods, the exact number of days for schools, universities, colleges and other institutions should be identified separately. The calculation of resultant VERs for the respective cluster be then calculated based on actual operation dates.				
Project participant response				**Date :** 19/03/2024
Please refer to the section B.1.1 on page 12 and 13 of Monitoring Report, "**FAR from GS4GG Performance review MP#2"** wherein the compliance against the FAR has been clearly specified.				
Documentation provided by project participant				
GS11189 VPA 01-30 Nigeria WPS - MP4 MR v2_19032024.docx				
DOE assessment				**Date :** 27/03/2024
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 169 no of operational days is comparable to the publicly available calendars on the websites of educational institutes in Nigeria. Since this was verified by the last verification team and also checked by the verification team for present monitoring period confirms it during the onsite visit. Thus, the VVB confirms that the actual days of operation is correctly determined by the CME for each type of institution and is conservatively applied to the other type of institutions operating around the year. Thus, the FAR#01 is closed				

Table 2. FAR from Deviation

FAR ID	02	**Section no.**	D.2	**Date :** 08/03/2024
Description of FAR				
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).				
Project participant response				**Date :** 19/03/2024

Please refer to section B.1.1 on page 11 of Monitoring Report, "**FAR from Deviation"** wherein the compliance against the FAR has been clearly specified. Additionally, it should be noted that there have been no modifications to the monitoring procedures, practices and protocols in comparison to the previous monitoring.
Documentation provided by project participant
GS11189 VPA 01-30 Nigeria WPS - MP4 MR v2_19032024.docx
DOE assessment **Date :** 27/03/2024
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 Thus, the FAR#02 is closed

FAR ID	03	**Section no.**	D.2	**Date :** 08/03/2024
Description of FAR				
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				
Project participant response				**Date :** 19/03/2024
Please refer to section B.1.1 on page 12 of Monitoring Report, "**FAR from Deviation"** wherein the compliance against the FAR has been clearly specified. Additionally, it should be noted that there have been no modifications to the monitoring procedures, practices and protocols in comparison to the previous monitoring.				
Documentation provided by project participant				
GS11189 VPA 01-30 Nigeria WPS - MP4 MR v2_19032024.docx				
DOE assessment				**Date :** 27/03/2024
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. Thus, the FAR#03 is closed				

Table 3. CL from this verification

CL ID	01	**Section no.**	E.5.2	**Date :** 08/03/2024
Description of CL				
PD is requested to provide the following documents for the current monitoring period (01/01/2023-30/11/2023): 1. HR records/ Sales and marketing records as supportive of SDG 8 2. Hygiene Awareness Campaign Report 3. Random generator screenshot 4. Grievance logbook 5. Training records				

Project participant response	**Date :** 19/03/2024
The requested documents have been shared along with the submission of this document.	
Documentation provided by project participant	
-	
DOE assessment	**Date :** 27/03/2024
PP has shared the documents requested by the VVB; the assessment team has reviewed the document as were the same were found to be appropriate. Thus, the CL#01 is closed	

CL ID	02	**Section no.**	TR comments	**Date :** 04/04/2024

Description of CL

PD is requested to address the following comments that has been raised during the technical review stage:

a. Under the 'Monitoring sample' tab of the ER sheet, please clarify why UID is missing for 4 entries in column N of the tab? How were these installations identified during the monitoring survey and compared with installation database?
b. Under the 'Installation database' tab of the ER sheet, some health care centers have been considered boarding, some non-boarding and others both. Please clarify the criteria for determining the category of institution.
c. Under column V of 'Installation database' tab of the ER sheet, please clarify how these system breakdown dates were identified? Several systems have the same breakdown date, but the rationale behind how these dates is identified/ marked is not clear.
d. In section D.3 "Comparison of monitored parameters with last monitoring period" of the MR, the usage rate of the present MP has increased from 95.94 to 96.84 from the last MP. PP is requested to clarify the reason for increasing usage rate of the project devices since previous monitoring period.

Project participant response **Date :** 08/04/2024

a. Each school / institution under the PoA is uniquely identifiable by virtue of it Salesforce ID, School name and Address. At the time of monitoring survey, the institutions were identified by its name, address and sales force ID recorded at the time of installation. Further at the time of monitoring surveys, the photo of school board is taken as objective evidence of having surveyed each sample uniquely and correctly.

   From the 4 entries referred, 3 entries pertain to UltraTab technology. At the time of survey for these 3 schools, the tablets had been fully consumed, thus rendering the surveyor unable to capture the product ID / photo of the tab packs. This is also substantiated by the fact that each of these 3 schools, reported not consuming Ultra Tabs since past couple of days, at the time of monitoring survey. The emission reduction model is already equipped to discount / no claim emission reductions for any period during which the supply remains short at any given school.

   The remaining 1 entry pertains to UltraFlo technology. During the project monitoring survey, the school respondent reported that the system was not used for the past two days (refer column AF, "Monitoring sample" tab of the ER sheet). As per the applied monitoring methodology and registered monitoring plan, premises reporting not having used the system in last two days, are discounted under $U_{p,}y$. Further, the system was installed in an overhead tank in this school whose access was challenging. Given, the system was already getting accounted as not in use, thus, the surveyor did not capture the product ID / photo for the concerned school.

Also, it is worth noting that the product IDs for each of these 4 schools is recorded in the database based on delivery notes, but just could not be recaptured during monitoring surveys.

b. The nature of the institution (Boarding/ Non-Boarding/ Both) is based on the type of infrastructure available. Firstly no health care center has been reported as fully boarding (refer columns C, D and I of Installation database). The health care centers that operate only for half day have been reported as non-boarding. The health care centers that provide boarding facilities for patients and staff (in limited capacity) have been marked as both as they have boarding (full day) and non-boarding (half day) population simultaneously being served on any given day. Please refer to Column J to L in the tab "Installation Database" of the ER sheet to confirm the % population spread between boarding and non-boarding for a project premise.

c. The total breakdown rate reported in the current monitoring period is merely ~5% of total installations, which is deemed nominal. Further an assessment of number of breakdowns reported on a given day (top 5 days) is as follows:

Date of Breakdown	No. of cases reported	% installations
01-01-2023	118	0.602%
01-07-2022	61	0.311%
16-02-2022	14	0.071%
18-05-2022	13	0.066%
03-03-2022	12	0.061%

As observed in the table above, 01/01/2023 has maximum number of breakdowns (118) reported. This is due to fact that school term in this monitoring period started on 09 Jan 2023 after a term break of 3 weeks during Christmas. Any school thus reporting breakdown immediately after resuming school has been conservatively considered to be under breakdown from beginning of the monitoring period.

All the remaining four days with highest number of breakdowns reported, pertain to previous monitoring period. These systems broke-down in last MP and either resumed operation during the concerned monitoring period or did not resume operation at all.

Also, for a project premise count of ~20k, receiving up to 10 breakdown complaints on any given day is deemed practically rational and feasible.

lastly, each project institution is provided with PP's contact number, as specified on the Partnership Enrolment form. Additionally, PP's contact detail is mentioned on the Water storage tanks and product cartridges/sacks distributed during supply deliveries. This ensures that institution representatives have full access to raise any concerns or grievances related to the product breakdown. Upon receiving such grievances, the Impact Water team promptly records the concern, feedback, or comments in the central database.

d. The concerned VPAs include two types of chlorination-based water purification systems:
UltraFlo (Flo/Inline): a continuous feeding system
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. This allows a given WPS to continue operating indefinitely with no ageing effect.

Additionally, each institution is approached during supply sessions and product usage training sessions. Also, the impact water customer care team actively engages with institutions on a regular basis to encourage use of project system. These calls also 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 has resulted in many of the previously out of use systems to restart usage and operation resulting in improvement of the usage rate of project.
Documentation provided by project participant
-
DOE assessment **Date :** 13/04/2024
a. The verification team found the justification satisfactory for why the 4 UIDs were missing from the monitored samples. PD made it clear that at the time of monitoring survey, the institutions were identified by its name, address and sales force ID recorded at the time of installation. Since all the 4 entries are considered and accounted as 'not in use' and has been discounted under the parameter Up,y, it is found acceptable by the verification team. Hence the comment is closed. b. Verification team found that the no health center has been seen as fully boarding but since the health care centers that provide boarding facilities for patients and staff (in limited capacity) have been marked as both as they have boarding (full day) and non-boarding (half day) population simultaneously. Hence the criterion of determining the category is clear to the verification team and the comment is closed. c. The verification team found the explanation for the breakdowns to be satisfactory. The majority of breakdowns listed in the same date is found to be because of the long term 3-week holidays in the school after Christmas and last MPs breakage and these reasons is found satisfactory by the verification team. Hence the comment is closed. d. PD's explanation on the technologies being 2 type of chlorination- based water purification systems and not being the type of technology of ICS where the performance decreasing with age gives verification team a pretty good idea on why the usage rate not decreasing with due course of time. PD's statement "When the treatment capacity of consumables (cartridge/tablets) is fully utilized, they are replaced, making the system revive operation again. This allows a given WPS to continue operating indefinitely with no ageing effect." Also clarifies why the usage rate for water purification technologies is increasing. The calls to ensure that maintenance and resupply needs are promptly addressed also improve the overall usage rate of the project. The comment has been satisfactorily addressed by the client and hence it is closed. Since all the four comments received during the technical review round has been addressed satisfactorily, the CL#02 is closed.

Table 4. CAR from this verification

CAR ID	NA	**Section no.**		**Date :** DD/MM/YYYY
Description of CAR				
NA				
Project participant response				**Date :** DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				**Date:** DD/MM/YYYY
NA				

Table 5. FAR from this verification

FAR ID	NA	**Section No.**		**Date :** DD/MM/YYYY
Description of FAR				
NA				
Project participant response				**Date :** DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				**Date:** DD/MM/YYYY
NA				

e.g., there is no FAR from this verification.