



**Verification and certification report form for
CDM programme of activities
(Version 03.0)**

Complete this form in accordance with the instructions attached at the end of this form.

BASIC INFORMATION

Title and UNFCCC reference number of the programme of activities (PoA)	UNFCCC Ref. No. of the PoA:- 9948 Title:- Impact Carbon Global Safe Water Programme of Activities (PoA)	
Version number(s) of the PoA-DD(s) to which this report applies	7.0	
Version number of the verification and certification report	2.0	
Completion date of the verification and certification report	20/04/2021	
Monitoring period number and duration of this monitoring period	Monitoring Period Number: Fourth Monitoring Period: 01/01/2020 – 21/03/2020 (both dates are included)	
Number and version number of the monitoring report to which this report applies	Version: 3.0 Monitoring Report Number: 2	
Coordinating/managing entity (CME)	Impact Carbon	
Host Parties	Host Parties of the PoA	Is this a host Party to a CPA covered in this report? (yes/no)
	Rwanda	No
	Uganda	No
	Nigeria	No
	Kenya	Yes
Applied methodologies and standardized baselines	Methodology: AMS-III.AV. Low greenhouse gas emitting safe drinking water production systems (Version 4.0) Standardized Baseline: Not Applicable	
Mandatory sectoral scopes	3: Energy Demand	
Conditional sectoral scopes, if applicable	Not Applicable	
Estimated amount of GHG emission reductions or GHG removals for this monitoring period in the included CPAs covered in this report	202,861 tCO ₂ e	
Certified amount of GHG emission reductions or GHG removals for this monitoring period for the included CPAs covered in this report	10,564 tCO ₂ e	
Name and UNFCCC reference number of the DOE	Earthood Services Private Limited E-0066	

Name, position and signature of the
approver of the verification and certification
report



Dr. Kaviraj Singh
Managing Director

SECTION A. Executive summary

The CDM PoA 9948 aims at distribution of the low carbon emissions water purification technologies to households, communities and institutions in Rwanda, Nigeria, Kenya and Uganda. Thus, PoA through the dissemination of these technologies aims to address the issue of lack of access to safe drinking water in target countries.

In absence of the PoA, boiling water using fossil fuels/non-renewable biomass would have been the means of availing safe drinking water. The project Water Purification Systems (WPS) provides safe drinking water without the use of non-renewable biomass/ fossil fuel, thus leading to a reduction in Green-house gas (GHG) emissions attributed to boiling in the baseline. This verification covers implemented CPAs 9948-P1-0004-CP1, 9948-P1-0023-CP1 to 9948-P1-0037-CP1 (16 CPAs).

The verification team confirms that the total emission reductions achieved under this monitoring period 01/01/2020 – 21/03/2020 (inclusive of both days) are 10,564 tCO₂e.

Scope of verification:

The verification is an independent and objective review, of ex-post determination of the monitored reductions in GHG emissions, by the DOE. The verification includes the implementation and operation of the PoA as set out in the revised accepted PoA-DD & CPA-DDs viz., 9948-P1-0004-CP1, 9948-P1-0023-CP1 to 9948-P1-0037-CP1 (16 CPAs) in the monitoring period.

The verification tests the data and assertions set out in the monitoring report prepared for this monitoring period by the CMEs and is based on the following:

- (i) The approved methodology AMS-III.AV. version 4.0: Low greenhouse gas emitting safe drinking water production systems/6/ applied in the PoA-DD & CPA-DDs/1/, /2/
- (ii) The registered and revised accepted PoA-DD & CPA-DDs and monitoring plan/1/, /2/
- (iii) UNFCCC criteria referred to in the Kyoto Protocol criteria and the CDM modalities and procedures as agreed in the Bonn Agreement and the Marrakech Accords
- (iv) The CDM Validation and Verification Standard (VVS) for PoA version 2.0 /9/
- (v) The CDM Project Standard (PS) /7/ and Project Cycle Procedure (PCP) for PoA version 2.0 /8/
- (vi) Relevant decisions, guidance and clarifications of the CMP and CDM Executive Board and any other information and references relevant to the project activity's reported emission reductions

The verification has considered both quantitative and qualitative aspects of stated/reported emission reductions. The monitoring report (all versions) and corresponding supporting documentation was assessed in accordance with the rules defined by UNFCCC, as appropriate to the PoA. The verification is not meant to provide any consulting or recommendations to the CME/others. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

Verification Process:

The verification process is conducted as per internal CDM Quality Manual /39/, which includes the following steps:

- a) Contract with CME and appointment of verification team and technical review team (refer Section B.1 and B.2 of this report)
- b) Completeness check of Monitoring Report/13/
- c) Publication of Monitoring Report at UNFCCC website
- d) Desk review (refer Section D.1 of this report) of Monitoring Report/13/ and corresponding ER sheet /4/ by verification team and planning of remote audit (including sampling approach (refer Section D.4 of this report) to be applied)
- e) Remote Audit Survey (refer Section D.2 of this report) (assessment of physical implementation of CPAs and interview with relevant stakeholders) by verification team consistent of Team Leader and all Technical Experts, as a minimum
- f) Follow up activities e.g., interviews (refer Section D.3 of this report)
- g) Reporting and closure of findings (CARs/CLs/FARs) and preparation of draft verification report (refer Section D.5 of this report)

- h) Independent technical review (refer Section F of this report) of the draft verification report and final/revised documentation (e.g., Monitoring Report, corresponding ER sheet and evidence)
- i) Reporting and closure of TR comments/findings (refer Section D.5 of this report) (CARs/CLs/FARs) and final approval for the decision made (refer Section G and H of this report).
- j) Issuance of final verification report to contracted CME (or authorized representatives) and submission of request for issuance, as appropriate.

Verification Conclusion:

Based on the outcome of the verification process of the registered/revised accepted PoA “Impact Carbon Global Safe Water Programme of Activities (PoA)” and its 16 CPAs (**9948-P1-0004-CP1, 9948-P1-0023-CP1 to 9948-P1-0037-CP1**) for the monitoring period 01/01/2020 – 21/03/2020 (including both dates) we confirm that the implementation of referenced registered/revised accepted PoA and CPAs is complying with applicable CDM rules and regulations as stated in the Monitoring Report (final) Version 3.0 dated 15/04/2021 /13/. The GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodologies AMS-III.AV. ver.4 Low greenhouse gas emitting safe drinking water production systems /6/ and the monitoring plan contained in the revised accepted PoA-DD /1/.

Earthood Services Private Limited can certify that the emission reductions from the registered CDM PoA UN#9948 “Impact Carbon Global Safe Water Programme of Activities (PoA)” in Kenya during the period 01/01/2020 – 21/03/2020 (both dates included) amount to **10,564 tCO₂e**. Therefore, this is being submitted for a request for issuance, as per UNFCCC procedures.

SECTION B. Verification team, technical reviewer and approver
B.1. Verification team members

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection*	Interview(s)	Verification findings
1.	Team Leader	IR	Mahala	Deepika	Central Office	Y	N	Y	Y
2.	Verifier	IR	Vatsa	Vaishali	Central Office	Y	N	Y	Y
3.	Technical Expert	IR	Mahala	Deepika	Central Office	Y	N	Y	Y
4.	Methodology Expert	IR	Mahala	Deepika	Central Office	Y	N	Y	Y
5.	Local Expert	IR	Njeri	Virginia	Central Office	Y	N	Y	N

*Remote audit surveys were conducted instead of on-site audit. Refer to section D.2 of this report for further details.

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

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer	IR	Gautam	Ashok	Central Office
2.	TA to TR	IR	Gautam	Ashok	Central Office
3.	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/CPA implementer while recording the responses of users in relation to survey parameters	High	The survey is conducted for representative samples of population, which may impact the population significantly. Surveyors may be unsupervised at the site.	Verification team randomly selected the samples from CME surveyed sampled WPS. The recorded survey forms by CME were checked with DOE remote audit survey observations. The verification team interviewed the monitoring staff and checked their training records.
2.	Calculation Errors	Med	The process is manual and therefore there is potential risk of errors / omissions/misstatements.	All calculations were checked by verification team with respect to applicable requirements under various documents viz., methodology, registered PoA DD/1/, CPA DDs/2/ etc.

C.2. Consideration of materiality in conducting the verification

In accordance with CDM VVS for PoAs Version 02.0 /9/ the prescribed thresholds for materiality for CDM PoAs are as under:

Type of PoA	PoAs comprising large-scale CPAs			PoAs comprising only small-scale CPAs	PoAs comprising only micro-scale CPAs
Emission Reductions (tCO ₂ e)/year	500,000 or more	300,001 to 499,999	300,000 or less		
Materiality Threshold	0.5%	1.0%	2.0%	5.0%	10.0%

The applicable materiality threshold is 5% as PoA comprises only small-scale CPAs.

Particulars / Monitoring Report	MR Version (Public)	MR Version (Revised/Final)
Emission Reductions Achieved (tCO ₂ e) in this monitoring period	16,038	10,564*
Applicable Threshold (%) as per CDM VVS for PoAs Version 02.0	5.0%	5.0%

*The verification team has identified the impact of errors observed and those have been corrected by CME during verification for all monitoring parameter at an individual and aggregate level.

Monitored Parameter (Symbol / Description)	Reporting Frequency	Number of Discrete Data* (Total) Total (100%)	Sample selected for verification Sample (100%)	Type of error identified	Impact on ERs	
					ERs impacted (Sample)	ERs impacted (Population based on extrapolation)
9948-P1-0004-CP1, 9948-P1-0023 – 9948-P1-0037-CP1						
For water purifier						
QPW _y	Annually	16(calculated parameter for each CPA)	16(100%)	None	NA	NA
n _{WB}	Continuously	1	1	None	NA	NA
T _{vi}	Continuously	550 –	550 – UltraFLO:	None	0.009%	0.009%

		UltraFLO; 935 – UltraTAB; 113 - Multi-UV Barrier (1,598)	935 – UltraTAB; 0 – Multi Barrier UV ¹ Sales database /4/ was checked for the information. 11 systems were checked during remote audit survey for cross check.			
$N_{y,i}$	Continuously	1,598 (one value for each institution) and 16 values (average value for each CPAs)	Entire sales database was checked for the information.	None	NA	NA
Water Quality _i	Annually	50	11 (based on acceptance sampling)	None	NA	NA
Operatio nal Units _i	once per verification	53	11 (based on acceptance sampling)	None	NA	NA
$f_{NRB,y}$	Continuously	1	1	None	NA	NA
$EF_{projected_fossilfuel}$	Continuously	1	1	None	NA	NA
Existence of public distributio n network of safe drinking water	Annually	50	11 (based on acceptance sampling)	None	NA	NA
$EC_{PJ,y}$	Annually	1	1	None	NA	NA

*There was a calculation error in the total number of UltraTAB systems considered in the ER sheet. The total number of UltraTAB systems considered were 910 in the initial MR published, while actually, it was 935. The issue was identified by the CME and fixed during the first-round response to issues raised by the verification team and was accepted by the verification team. Moreover, based on I&R issues received from UN, the CME has applied a conservative approach to credit the systems for school operational days during the monitoring period instead of duration of the monitoring period. This has led to a reduction in the total ERs significantly. There were no other errors identified during the desk review of MR, ER Sheet and other supporting documents shared by the CME.

Based on the above table it can be confirmed that the actual individual and aggregated material error is determined for the registered PoA as per CDM VVS for PoA/09/. The applicable threshold for materiality in accordance with CDM PoA VVS Version 2 para 308(d)/9/ is 5%.

SECTION D. Means of verification

D.1. Desk/document review

A desk review was conducted by the verification team that included:

- A review of data and information provided for its completeness.
- A review of registered monitoring plan, monitoring methodologies including applicable tools, standards and the applicable applied standardized baselines.

¹ Multi barrier UV systems have not been monitored by CME for this monitoring period, hence they were not considered under verification Sample

All the documents reviewed during the verification process are listed in the Appendix 3 of VCR.

D.2. On-site inspection²

Duration of on-site inspection: NA*				
No.	Activity performed on-site	Site location	Date	Team member
1.	Interview of the monitoring personnel and CME representative	-	15/10/2020 & 16/10/2020	Deepika Mahala and Vaishali Vatsa, Virginia Njata
2.	Interview of the head of institution related to the DoE sampled project devices	-	15/10/2020 & 16/10/2020	Deepika Mahala and Vaishali Vatsa, Virginia Njata

*No physical site-visit was conducted, alternative means were adopted under which remote audit survey was also conducted.

Mandatory Site-visit:

The site-visit for the current verification was mandatory, as two of the conditions for verification that require a mandatory site visit were applicable.

Para 321 of VVS for PoA, version 2.0 /9/ lists that

It is mandatory for the DOE to conduct an on-site inspection at verification for the included CPA if:

- It is the first verification for the DOE with regard to this CPA;
- More than three years have elapsed since the last on-site inspection conducted for verification for the CPA; or
- The CPA has achieved more than 300,000 tCO_{2e} of GHG emission reductions or net anthropogenic GHG removals since the last verification when an on-site inspection was conducted.

It is the third verification for the DOE with regard to this CPAs but these CPAs have been verified remotely during its previous two verifications/40/,/58/.

At the time of verification, the country where DOE office is based, India, is witnessing the second highest number of COVID-19 infected people in the world, and total number of infected cases reaching at 8.41 million /52/. Under such circumstances, the verification team is avoiding the risk of contacting the virus by not conducting the physical on-site visit. Therefore, the site visit was not conducted for this issuance due to outbreak of global pandemic Covid-19, increased risk of exposure and contraction due to travel as the cases in the country are spurting/48/.

Also, it was duly assessed if the site visit can be postponed /53/. The delay to site visit would mean that the verification would have to be postponed. However, communications on this topic were made /34/, and evidence were provided by CME that delay to the verification site visit would lead to a delayed issuance. This would result in a contractual breach of (and termination/rescission of) underlying Emissions Reductions Purchase Agreement and loss of all future revenues for the CME, as verified from ERPA/35/ by the verification team. On the basis of above, the verification team decided to follow the UN EB 106 Para 26 decision, and adopted an alternative approach for site visit, which is discussed in the below paragraphs.

UN EB decision on Mandatory DOE on-site visits:

UN EB 106 report (Para 26) mentions the decision EB took on 20th March, in relation to DOE on-site visit which was applicable from 23rd March 2020 to 23rd June 2020/46/. The Executive Board of the Clean Development Mechanism (CDM) agreed on 23 June 2020, on an exceptional basis considering the COVID-19 pandemic, to extend the period in which CDM Designated Operational Entities (DOEs) may apply alternative measures of validation/verification to mandatory on-site inspections until 31 December 2020/47/ which has now been extended till 30/06/2021 in EB 108.

Therefore, for reasons provided above, and in line with UN EB guidelines, the assessment team conducted the verification for this PoA batch using alternative means as defined in the CDM VVS-PoA, ver. 2.0/9/. DOE verification team applied standard auditing techniques while verifying the PoA verification, as discussed below.

Alternative means applied:

² This table lists down the activities conducted during the remote audit survey

In the form of alternative means to the on-site inspection, standard auditing techniques were applied by the verification team, which are:

1. Remote Audit Surveys including interviews of CME/CPA Implementer, end users and the personnel's involved in monitoring and preparation of the monitoring report and related documents. Random samples for eleven WPS users (details on sampling provided in section D.3) were drawn from the CME's monitoring sample survey sheet and interviewed through skype video / audio calls (recorded).
2. Photographic evidence of the Aquagenx testing kit and water quality testing results /30/, Installed WPS with Unique Product IDs /27/, Monitoring Survey (filled) Forms /18/.
3. Complaint Log (Scanned Samples) /36/
4. Monitoring personnel training certificates /20/
5. Review of Other Documentary evidence (ER sheet /4/, Sample Size Calculation sheet /4/, Monitoring Data sheet /4/ amongst others)
6. Review of Basic information related to the WPS installation (Purchase order/14/, Delivery Notes/21/) and the interview of the respective school representative.

These alternative methods were considered sufficient by the verification team for the current verification.

D.3. Interviews³

No.	Interviewee			Date	Subject	Team member
	Last name	First name	Affiliation			
1.	Turgesen	Mark	Impact Water	15/10/2020-16/10/2020	Sampling Surveys, WQTs	Deepika Mahala, Vaishali Vatsa
2.	Kibagendi	Everline	Impact Water	15/10/2020-16/10/2020	Implementation	Deepika Mahala, Vaishali Vatsa
3.	Brown	Julie	Impact Carbon	15/10/2020-16/10/2020	Implementation, Sales records	Deepika Mahala, Vaishali Vatsa
4.	Neville	Tim	Impact Carbon	15/10/2020-16/10/2020	Database management	Deepika Mahala, Vaishali Vatsa
5.	Lohia	Rohit	CSIPL	15/10/2020-16/10/2020	Monitoring Report, Sampling methodology, ER calculations	Deepika Mahala, Vaishali Vatsa
6.	Kumar	Nihar	CSIPL	15/10/2020-16/10/2020	Monitoring Report, Sampling methodology, ER calculations	Deepika Mahala, Vaishali Vatsa
7.	Kumar	Ritesh	CSIPL	15/10/2020-16/10/2020	Monitoring surveys	Deepika Mahala, Vaishali Vatsa
8.	Huelsenbeck	Mark	Impact Water	15/10/2020-16/10/2020	Monitoring Report, Sampling methodology, ER calculations	Deepika Mahala, Vaishali Vatsa
9.	Mwanza	Pius	Principal (K1808733)	15/10/2020-16/10/2020	DOE Remote audit survey sample (UltraFLO)	Deepika Mahala, Vaishali Vatsa and Virginia Njeri
10.	Langat	Reuben	Vice Principal (K1805914)	15/10/2020-16/10/2020	DOE Remote audit survey sample (UltraFLO)	Deepika Mahala, Vaishali Vatsa and Virginia Njeri
11.	Kanyeki	John	Head of School (K1816800)	15/10/2020-16/10/2020	DOE Remote audit survey sample (UltraFLO)	Deepika Mahala, Vaishali Vatsa and Virginia Njeri
12.	Karimi	George	Head of School (K1817120)	15/10/2020-16/10/2020	DOE Remote audit survey sample (UltraFLO)	Deepika Mahala, Vaishali Vatsa and Virginia Njeri
13.	Kang'ethe	Sr. Mercy	Admin officer (K1816885)	15/10/2020-16/10/2020	DOE Remote audit survey sample (UltraFLO)	Deepika Mahala, Vaishali Vatsa and Virginia Njeri
14.	Sang	Philip	Head Teacher (K1807448)	15/10/2020-16/10/2020	DOE Remote audit survey sample (UltraTAB)	Deepika Mahala, Vaishali Vatsa and Virginia Njeri
15.	Simiyu	Alice	Head of	15/10/2020-	DOE Remote audit	Deepika Mahala,

³ The interviews were conducted via Skype video/audio call.

			School (K1816958)	16/10/2020	survey sample (UltraTAB)	Vaishali Vatsa and Virginia Njeri
16.	Atetwe	Ayub	Head Teacher (K1817686)	15/10/2020-16/10/2020	DOE Remote audit survey sample (UltraTAB)	Deepika Mahala, Vaishali Vatsa and Virginia Njeri
17.	Nalwende	Rachel	Teacher (K1829065)	15/10/2020-16/10/2020	DOE Remote audit survey sample (UltraTAB)	Deepika Mahala, Vaishali Vatsa and Virginia Njeri
18.	Lihanda	Mary	Head Teacher (K1828772)	15/10/2020-16/10/2020	DOE Remote audit survey sample (UltraTAB)	Deepika Mahala, Vaishali Vatsa and Virginia Njeri
19.	Katibi	Oure	Principal (K1819421)	15/10/2020-16/10/2020	DOE Remote audit survey sample (UltraTAB)	Deepika Mahala, Vaishali Vatsa and Virginia Njeri

D.4. Sampling approach

CME 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 4.0 /31/ and Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 8.0 /19/ which is in-line with the revised accepted PoA DD /1/. The CME has applied Stratified Random Sampling at PoA level for different monitoring parameters as per revised accepted PoA DD /1/ and registered CPA DDs /2/. 95/10 confidence precision was applied by CME in the sampling which is appropriate as per the single sampling covering all the CPAs⁴ which are part of this batch under issuance. The CME applied stratified random sampling at the unit level, giving an equal chance of selection to each unit in the sampling frame. Thus, a PoA wide single sampling plan was applied by the CME.

DOE Sampling approach

In order to meet the requirements of paragraph 28 of Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 8.0 /19/ the verification team applied acceptance sampling in the verification (in accordance with para 28).

According to para 30 of the Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 8/19/, the maximum errors associated with DOE sampling are provided as below:

- (a) A 10 per cent chance that the DOE will wrongly reject the project participants' or the coordinating/managing entity's records (i.e. reject a set of records of acceptable quality);
- (b) A 10 per cent chance that the DOE will wrongly accept the project participants' or the coordinating/managing entity's records (i.e. accept a set of records which is unacceptable).

Verification team has applied following AQL and UQL level using its own judgement:

0.5% AQL- Acceptable quality level (AQL) or the level of assurance, that is the proportion of acceptable discrepancies between the project participants' or the coordinating/managing entity's sample records and the DOE sample records

20% UQL- Unacceptable quality level (UQL), that is the proportion of unacceptable discrepancies between the project participants' or the coordinating/managing entity's sample records and the DOE sample records

The verification team selected the sample size as 11 institutions for the purpose of remote audit survey to check the acceptability of CME's sampling results or otherwise.

Sample Size:

CPA Ref No.	AQL	UQL	Producer Risk	Consumer Risk	Sample Size; Min	Acceptance No.
9948-P1-0004-CP1, 9948-P1-0023 to 9948-P1-0037-CP1	0.5%	20%	10%	10%	11	0

⁴ CPA 9948-P1-0004-CP1 has not been monitored by the CME for this monitoring period. Refer section E.3.2.1 of this report for further details

The verification team selected the random samples from CME's sampled records to check the acceptability (or otherwise) of the data for each such record with CME's sample records, and determine if the CME's sample records meet the requirements.

The distribution breakup from sales database is as follows:

Type of WPS	No. of units installed
Ultra FLO	2,471
Ultra Tab	2,261
Multi-Barrier UV	138

The CME during the current monitoring period was unable to conduct the monitoring of Multi-Barrier UV units and have considered a PRC (discussed in detail under section E.3.2.1 of this report). Given, CME has not monitored Multi-Barrier UV, hence the acceptance sampling was only applied to the monitoring results of UltraFLO and UltraTAB. Thus, samples of Ultra-Flo and Ultra-Tab units were chosen randomly (using website www.randomizer.org) out of a total of 53 CME's monitored samples (as part of monitoring survey). As per audit plan 11 systems were required for acceptance sampling. DOE surveyed 5 samples of UltraFLO type and 6 samples of UltraTab type. No inconsistency between the CME results and DOE's observations during the remote survey were found.

D.5. Clarification requests, corrective action requests and forward action requests raised

Areas of verification findings	No. of CL	No. of CAR	No. of FAR
General	-	-	-
Compliance of the monitoring report with the monitoring report form	-	-	-
Remaining forward action requests from validation and/or previous verifications	-	-	-
CPAs considered for verification and covered in this report	-	-	-
Programme of activities	-	-	-
Compliance of the programme implementation with the registered PoA-DD	CL#07		-
Implementation and operation of the management system	-	-	-
Post-registration changes	-	-	-
• Corrections	-	-	-
• Inclusion of a monitoring plan	-	-	-
• Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents ⁵	-	-	-
• Changes to the programme design	-	-	-
• Addition of CPA inclusion template	-	-	-
• Change of coordinating/managing entity	-	-	-
• Changes specific to afforestation and reforestation activities	-	-	-
Component project activities	-	-	-
Compliance of the CPA implementation with the included CPA design document	CL#07	-	-
Post-registration changes	-	-	-
• Temporary deviations from registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents	-	-	-
• Corrections	-	-	-
• Changes to the start date-of the crediting period	-	-	-
• Inclusion of a monitoring plan	-	-	-

*

⁵Other standards, methodologies, methodological tools and guidelines (to be) applied in accordance with the applied(selected) methodologies are collectively referred to as the other (applied) methodological regulatory documents).

<ul style="list-style-type: none"> Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents 	-	-	-
<ul style="list-style-type: none"> Changes to the project design 	-	-	-
<ul style="list-style-type: none"> Changes specific to afforestation and reforestation activities 	-	-	-
Compliance of the registered monitoring plan with applied methodologies and standardized baselines	-	-	-
Compliance of monitoring activities with the registered monitoring plan	-	-	-
<ul style="list-style-type: none"> Data and parameters fixed ex ante or at renewal of crediting period 	-	-	-
<ul style="list-style-type: none"> Data and parameters monitored 	CL#01 CL#02 CL#03 CL#04 CL#05 CL#06	CAR#01 CAR#02 CAR#03	FAR#01 FAR#02
<ul style="list-style-type: none"> Implementation of sampling plan 	-	CAR#01	-
Compliance with the calibration frequency requirements for measuring instruments	-	-	-
Assessment of data and calculation of emission reductions or net removals	-	CAR#04	-
<ul style="list-style-type: none"> Calculation of baseline GHG emissions or baseline net GHG removals by sinks 	-	-	-
<ul style="list-style-type: none"> Calculation of project GHG emissions or actual net GHG removals by sinks 	-	-	-
<ul style="list-style-type: none"> Calculation of leakage GHG emissions 	-	-	-
<ul style="list-style-type: none"> Summary of calculation of GHG emission reductions or net GHG removals by sinks 	-	-	-
<ul style="list-style-type: none"> Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included CPA 	-	-	-
<ul style="list-style-type: none"> Remarks on difference from estimated value in included CPA 	-	-	-
Assessment of reported sustainable development co-benefits	-	-	-
Global stakeholder consultation	-	-	-
Others (please specify)	-	-	-
Total	07	04	02

SECTION E. Verification findings

E.1. General

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

Means of verification	The monitoring report form used is CDM-PoA-MR-FORM version 03.0 /10/ which is an appropriate form available at the time of verification/submission for request for issuance. All the sections of the aforesaid form were duly filled as per the instructions provided to fill it. The sections in the form are providing all the relevant details, and the template was not found altered at any place.
Findings	No findings were raised.
Conclusion	The final monitoring report /13/ is found to be in-line with the latest CDM-PoA-MR-form /10/ available and the instructions therein.

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

FAR#01 was found to be raised and resolved during the validation of the inclusion of CPAs 23 to CPA 37 /3/. Apart from this, there were no other FARs raised during the previous verifications /37/, /40/. Two FARs have been raised in this verification covering these CPAs, to be addressed for subsequent verifications. Please refer Appendix 4.

E.1.3. CPAs considered for verification and covered in this report

Title and UNFCCC reference number of the CPA included in the PoA as of the end of this monitoring period	Is the CPA considered for this verification? (yes/no)	The date when the CPA was included	Version of the PoA-DD	Confirmation that a request for issuance including the CPA has been published for the previous monitoring period (Y/N)
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 1, Version: 3.0, Ref No.:9948-P1-0001-CP1	No	01/05/2014	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 2, Version: 3.0, 9948-P1-0002-CP1	No	01/05/2014	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 3, Version: 1.3, 9948-P1-0003-CP1	No	08/05/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 4, Version: 01.2, 9948-P1-0004-CP1	Yes	02/07/2017	7.0	Yes ⁶
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 5, Version: 5.0, 9948-P1-0005-CP1	No	04/10/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 6, Version: 5.0, 9948-P1-0006-CP1	No	04/10/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 7, Version: 5.0, 9948-P1-0007-CP1	No	04/10/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 8, Version: 5.0, 9948-P1-0008-CP1	No	04/10/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 9, Version: 5.0, 9948-P1-0009-CP1	No	04/10/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 10, Version: 5.0, 9948-P1-0010-CP1	No	04/10/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 11, Version: 5.0, 9948-P1-0011-CP1	No	04/10/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 12, Version: 5.0, 9948-P1-0012-CP1	No	04/10/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 13, Version: 5.0, 9948-P1-0013-CP1	No	04/10/2017	7.0	NA

⁶ https://cdm.unfccc.int/PoAIssuance/iss_db/poaiss501097411/view

Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 14, Version: 1.0, 9948-P1-0014-CP1	No	21/11/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 15, Version: 1.0, 9948-P1-0015-CP1	No	21/11/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 16, Version: 5.0, 9948-P1-0016-CP1	No	21/11/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 17, Version: 5.0, 9948-P1-0017-CP1	No	21/11/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 18, Version: 5.0, 9948-P1-0018-CP1	No	21/11/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 19, Version: 5.0, 9948-P1-0019-CP1	No	21/11/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 20, Version: 5.0, 9948-P1-0020-CP1	No	21/11/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 21, Version: 5.0, 9948-P1-0021-CP1	No	21/11/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 22, Version: 5.0, 9948-P1-0022-CP1	No	21/11/2017	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 23, Version: 4.0, 9948-P1-0023-CP1	Yes	18/11/2018	7.0	Yes ⁷
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 24, Version: 4.0, 9948-P1-0024-CP1	Yes	18/11/2018	7.0	Yes ⁸
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 25, Version: 4.0, 9948-P1-0025-CP1	Yes	18/11/2018	7.0	Yes ⁹
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 26, Version: 4.0, 9948-P1-0026-CP1	Yes	18/11/2018	7.0	Yes ¹⁰
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 27, Version: 4.0, 9948-P1-0027-CP1	Yes	18/11/2018	7.0	Yes ¹¹
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 28, Version: 4.0, 9948-P1-0028-CP1	Yes	18/11/2018	7.0	Yes ¹²
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 29, Version: 4.0, 9948-P1-0029	Yes	18/11/2018	7.0	Yes ¹³
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 30, Version: 4.0, 9948-P1-0030-CP1	Yes	18/11/2018	7.0	Yes ¹⁴

⁷ https://cdm.unfccc.int/PoAIssuance/iss_db/poaiss501097411/view

⁸ https://cdm.unfccc.int/PoAIssuance/iss_db/poaiss501097411/view

⁹ https://cdm.unfccc.int/PoAIssuance/iss_db/poaiss501097411/view

¹⁰ https://cdm.unfccc.int/PoAIssuance/iss_db/poaiss501097411/view

¹¹ https://cdm.unfccc.int/PoAIssuance/iss_db/poaiss501097411/view

¹² https://cdm.unfccc.int/PoAIssuance/iss_db/poaiss501097411/view

¹³ https://cdm.unfccc.int/PoAIssuance/iss_db/poaiss501097411/view

¹⁴ https://cdm.unfccc.int/PoAIssuance/iss_db/poaiss501097411/view

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Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 31, Version: 4.0, 9948-P1-0031-CP1	Yes	18/11/2018	7.0	Yes ¹⁵
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 32, Version: 4.0, 9948-P1-0032-CP1	Yes	18/11/2018	7.0	Yes ¹⁶
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 33, Version: 4.0, 9948-P1-0033-CP1	Yes	18/11/2018	7.0	Yes ¹⁷
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 34, Version: 4.0, 9948-P1-0034-CP1	Yes	18/11/2018	7.0	Yes ¹⁸
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 35, Version: 4.0, 9948-P1-0035-CP1	Yes	18/11/2018	7.0	Yes ¹⁹
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 36, Version: 4.0, 9948-P1-0036-CP1	Yes	18/11/2018	7.0	Yes ²⁰
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 37, Version: 4.0, 9948-P1-0037-CP1	Yes	18/11/2018	7.0	Yes
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 38 supported by Republic of Korea, Version: 2.0, 9948-P1-0038-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 39 supported by Republic of Korea, Version: 2.0, 9948-P1-0039-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 40 supported by Republic of Korea, Version: 2.0, 9948-P1-0040-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 41 supported by Republic of Korea, Version: 2.0, 9948-P1-0041-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 42 supported by Republic of Korea, Version: 2.0, 9948-P1-0042-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 43 supported by Republic of Korea, Version: 1.0, 9948-P1-0043-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 44 supported by Republic of Korea, Version: 1.0, 9948-P1-0044-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 45 supported by Republic of Korea, Version: 1.0, 9948-P1-0045-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 46 supported by Republic of Korea, Version: 1.0, 9948-P1-0046-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 47 supported by Republic of Korea, Version: 1.0, 9948-P1-0047-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 48 supported by Republic of Korea, Version: 1.0, 9948-P1-0048-CP1	No	26/04/2019	7.0	NA

¹⁵ https://cdm.unfccc.int/PoAIssuance/iss_db/poai501097411/view

¹⁶ https://cdm.unfccc.int/PoAIssuance/iss_db/poai501097411/view

¹⁷ https://cdm.unfccc.int/PoAIssuance/iss_db/poai501097411/view

¹⁸ https://cdm.unfccc.int/PoAIssuance/iss_db/poai501097411/view

¹⁹ https://cdm.unfccc.int/PoAIssuance/iss_db/poai501097411/view

²⁰ https://cdm.unfccc.int/PoAIssuance/iss_db/poai501097411/view

Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 49 supported by Republic of Korea, Version: 1.0, 9948-P1-0049-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 50 supported by Republic of Korea, Version: 1.0, 9948-P1-0050-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 51 supported by Republic of Korea, Version: 1.0, 9948-P1-0051-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 52 supported by Republic of Korea, Version: 1.0, 9948-P1-0052-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 53 supported by Republic of Korea, Version: 1.0, 9948-P1-0053-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 54 supported by Republic of Korea, Version: 1.0, 9948-P1-0054-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 55 supported by Republic of Korea, Version: 1.0, 9948-P1-0055-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 56 supported by Republic of Korea, Version: 1.0, 9948-P1-0056-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 57 supported by Republic of Korea, Version: 1.0, 9948-P1-0057-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 58 supported by Republic of Korea, Version: 1.0, 9948-P1-0058-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 59 supported by Republic of Korea, Version: 1.0, 9948-P1-0059-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 60 supported by Republic of Korea, Version: 1.0, 9948-P1-0060-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 61 supported by Republic of Korea, Version: 1.0, 9948-P1-0061-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 62 supported by Republic of Korea, Version: 1.0, 9948-P1-0062-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 63 supported by Republic of Korea, Version: 1.0, 9948-P1-0063-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 64 supported by Republic of Korea, Version: 1.0, 9948-P1-0064-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 65 supported by Republic of Korea, Version: 1.0, 9948-P1-0065-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 66 supported by Republic of Korea, Version: 1.0, 9948-P1-0066-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 67 supported by Republic of Korea, Version: 1.0, 9948-P1-0067-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 68 supported by Republic of Korea, Version: 1.0, 9948-P1-0068-CP1	No	26/04/2019	7.0	NA

Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 69 supported by Republic of Korea, Version: 1.0, 9948-P1-0069-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 70 supported by Republic of Korea, Version: 1.0, 9948-P1-0070-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 71 supported by Republic of Korea, Version: 1.0, 9948-P1-0071-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 72 supported by Republic of Korea, Version: 1.0, 9948-P1-0072-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 73 supported by Republic of Korea, Version: 1.0, 9948-P1-0073-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 74 supported by Republic of Korea, Version: 1.0, 9948-P1-0074-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 75 supported by Republic of Korea, Version: 1.0, 9948-P1-0075-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 76 supported by Republic of Korea, Version: 1.0, 9948-P1-0076-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 77 supported by Republic of Korea, Version: 1.0, 9948-P1-0077-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 78 supported by Republic of Korea, Version: 1.0, 9948-P1-0078-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 79 supported by Republic of Korea, Version: 1.0, 9948-P1-0079-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 80 supported by Republic of Korea, Version: 1.0, 9948-P1-0080-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 81 supported by Republic of Korea, Version: 1.0, 9948-P1-0081-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 82 supported by Republic of Korea, Version: 1.0, 9948-P1-0082-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 83 supported by Republic of Korea, Version: 1.0, 9948-P1-0083-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 84 supported by Republic of Korea, Version: 1.0, 9948-P1-0084-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 85 supported by Republic of Korea, Version: 1.0, 9948-P1-0085-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 86 supported by Republic of Korea, Version: 1.0, 9948-P1-0086-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 87 supported by Republic of Korea, Version: 1.0, 9948-P1-0087-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 88 supported by Republic of Korea, Version: 1.0, 9948-P1-0088-CP1	No	26/04/2019	7.0	NA

Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 89 supported by Republic of Korea, Version: 1.0, 9948-P1-0089-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 90 supported by Republic of Korea, Version: 1.0, 9948-P1-0090-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 91 supported by Republic of Korea, Version: 1.0, 9948-P1-0091-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 92 supported by Republic of Korea, Version: 1.0, 9948-P1-0092-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 93 supported by Republic of Korea, Version: 1.0, 9948-P1-0093-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 94 supported by Republic of Korea, Version: 1.0, 9948-P1-0094-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 95 supported by Republic of Korea, Version: 1.0, 9948-P1-0095-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 96 supported by Republic of Korea, Version: 1.0, 9948-P1-0096-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 97 supported by Republic of Korea, Version: 1.0, 9948-P1-0097-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 98 supported by Republic of Korea, Version: 1.0, 9948-P1-0098-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 99 supported by Republic of Korea, Version: 1.0, 9948-P1-0099-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 100 supported By Republic of Korea, Version: 1.0, 9948-P1-0100-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 101 supported By Republic of Korea, Version: 1.0, 9948-P1-0101-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 102 supported By Republic of Korea, Version: 1.0, 9948-P1-0102-CP1	No	26/04/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 103 supported By Republic of Korea, Version: 1.0, 9948-P1-0103-CP1	No	11/06/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 104 supported By Republic of Korea, Version: 1.0, 9948-P1-0104-CP1	No	11/06/2019	7.0	NA
Impact Carbon Global Safe Water Programme of Activities (PoA): CPA 105 supported By Republic of Korea, Version: 1.0, 9948-P1-0105-CP1	No	11/06/2019	7.0	NA

E.2. Programme of activities

E.2.1. Compliance of the programme implementation with the registered programme design document

Means of verification	The PoA aims at disseminating water purification systems (WPS) technologies to target countries Rwanda, Nigeria, Uganda and Kenya for addressing the problem of access of safe drinking water. In this monitoring report, 15 CPAs of Type 2: Technologies for institutional water consumption, no project emissions (i.e., from 9948-P1-0023-CP1 to 9948-P1-0037-CP1) and 1 CPA (9948-P1-0004-CP1) of Type 3: Technologies for institutional water
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consumption, with project emissions, were considered. This monitoring report includes the implementation of 16 CPAs from 9948-P1-0004-CP1, 9948-P1-0023-CP1 to 9948-P1-0037-CP1 in Kenya. The coordinating and managing entity (CME) is Impact Carbon and Impact Water is the CPA Implementer /15/ for these CPAs. Their roles and responsibilities are defined in the signed agreement.

In the absence of the project activity, the drinking water would have been boiled by the institutions using non-renewable biomass/fossil fuels leading to release of equivalent GHG emissions in the baseline. The implementation of the technology helps in replacing the use of non-renewable biomass / fossil fuel for boiling water with the WPS, thus reducing amount of equivalent GHG emissions.

The aforesaid CPAs involve dissemination of two types of water purification systems:

1. Chlorination (UltraFLO/UltraTab)
2. Multi-Barrier UV

The technical specifications/28/ of the WPS distributed under the CPAs is provided in the table below:

Description	Ultra FLO	Ultra Tab	Multi-Barrier UV
Size / Dimensions	Cartridge Length: ~12 cm Cartridge height: ~10 cm Cartridge circumference: ~22 cm	Strip size: ~13 cm X ~5.5 cm (100 tablets per packet)	System Height: ~44cm System Length: ~36 cm System Width: ~19 cm
Application	Piped water	Un-piped water	Piped water
Flow rate	20L/min	1 tablet treats 100 L	5-12 L/min
Capacity/lifespan	340,000 L / 5-year expiry	10,000 L / 5-year expiry	4,088,232 L / 7 years
Fixed or Portable	Fixed	Portable	Fixed
Removal of E. Coli	99 (2-log)	99 (2-log)	99 (4-log)
Watts/Voltage	Not applicable	Not applicable	14 W

All the systems meet the eligibility requirements of the PoA DD, page 65 /1/. The details of the systems were verified with the manufacturer's specifications /28/ provided by the CME. The Verification team assessed the following information to verify the capacity and lifetime of systems under the CPAs:

- I. Technical specification including capacity / expiry of UltraFLO issued by Medentech (technology supplier)
- II. Technical specification including capacity / expiry of UltraTAB issued by Medentech (technology supplier)
- III. The UltraTAB strip clearly mentions the treatment capacity of 1 tablet as 100ltrs and an UltraTAB pack is standardized at 10 strips of 10 tablets each, rendering the capacity of UltraTAB pack as 10,000 ltrs (verified physically during previous site visits as well as UltraTAB photos).
- IV. UltraFLO Installation Manual (specifying inlet port size, pressure rating etc.)
- V. UltraFLO cartridges are manufactured in a standardized size as per the dimensions specified in the CPA-DDs and MR (verified physically during previous site visits as well as UltraFLO dimension declaration by CME) and pertains to the specifications issued by Medentech.
- VI. 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)
- VII. Multi-Barrier UV - Technical Specification from Supplier (Rotek) for UV systems confirming treatment capacity and other parameters (inlet port size, pressure rating, wattage etc.)
- VIII. Multi-Barrier UV - Lifespan confirmation from Supplier (Rotek)
- IX. Installation Logs for Multi-Barrier UV and UltraFlo systems confirming piped applications.

	<p>The photographs of the WPS/27/ installed by the CME were checked by the verification team and found to be in-line with the technical description provided in the registered PoA-DD /1/ and Monitoring report /13/ and manufacturer's specifications /28/.</p> <p>Also, the verification team checked the implementation status of the project activity through interviewing the CME, the CPA implementer, monitoring personnel and WPS Users as defined in the registered PoA DD /1/, and MR /13/.</p> <p>Skype calls /42/ with the personnel involved in the QA/QC procedures revealed that the procedures mentioned in the PoA DD /1/ are being followed and the Training records /20/ regarding the trained personnel were checked.</p> <p>The project location and coordinates shared by CME were verified using the Latitude and Longitude verification through website "latlong.net" /41/ "between 5.03° to -4.65° north latitude and between 34.03° to 41.9° east longitude" and found to be in-line with the registered PoA-DD /1/ and MR /13/.</p> <p>Further, based on the review of sales database (presented in ER sheet) /4/, remote audit survey observations and interview conducted during remote audit survey, the verification team found that:</p> <ul style="list-style-type: none"> • The CPA(s) were implemented within the boundary of the PoA as described in the revised accepted PoA-DD /1/. • The CME is same as that mentioned in the revised accepted PoA-DD /1/ • The implementation and operation of the project activity have been conducted in accordance with the description contained in the revised accepted PoA-DD /1/ and included CPA-DDs /2/. • All physical features of the CPA proposed in the included CPA-DDs /2/ were in place. • The project participants/CPA implementer has operated the CPAs in-line with the information provided in the included CPA DDs /2/. <p>A remote audit survey was conducted by the verification team; 11 institutions (6 for UltraTAB, 5 for UltraFLO) were surveyed. The uniqueness of the system was identified from UID written on the units (either on cartridges in case of UltraFLO or on UltraTAB box packs) /27/. Along with the unique ID, the following details were also noted in the database:</p> <ol style="list-style-type: none"> a) Type of system (UltraFLO / UltraTAB / Mult-barrier UV) b) Unique serial number of the units installed / distributed c) Date of installation / distribution d) Address of institution e) Type of institution (Boarding / Non-boarding) f) Institution population count (number of students / staff in boarding / non-boarding category) <p>The information of the WPS was also verified from the CME database /5/ which was cross checked for 11 samples with their corresponding purchase orders and delivery notes /14/.</p> <p>The emission reductions being claimed during this monitoring period are lesser than the estimated ERs in the revised or included CPA-DDs /2/, as given in the table under section E.3.6.5. of this report for comparing ex-ante estimated ERs in the CPA DDs /2/ for the corresponding period with the actual ERs achieved.</p> <p>The CPAs are within the threshold limits of the applied methodology /6/.</p> <p>The monitoring report was compared and verified against the description provided in the revised accepted PoA-DD /1/ and found to be correct.</p>
Findings	CL#07 was raised and resolved.
Conclusion	<p>On the basis of the information verified through the remote audit survey, the verification team is able to confirm that all physical features (technology, project equipment, and monitoring equipment as applicable) of the registered CDM program of activities were in place and that the CME has operated the project activity as per the revised accepted PoA-DD /1/ during the concerned monitoring period.</p> <p>The emission reductions achieved during the current monitoring period are 10,564 tCO₂e. The verification has been conducted in-line with the CDM VVS for PoA version 2.0 /9/.</p>

E.2.2. Implementation and operation of the management system

Means of verification	<p>The verification team through interviewing the CME, CPA Implementer, Monitoring Personnel and WPS End-users assessed the management systems in place to implement the monitoring of the PoA. This included the review of roles and responsibilities, data collection, transfer and aggregation procedures, data storage and archiving for the monitoring system through remote audit survey. The roles and responsibilities, data collection, transfer and aggregation procedures, data storage and archiving for the monitoring system have been provided in the MR /13/ and were verified through interviews with the CME and other people involved in the project.</p> <p>CPA implementers fill purchase order /14/ to note the details of the institution and provide delivery note /21/ at the time of installation (receipt of tablets in case of Ultra TAB). All the information is transferred to Salesforce software by the CME which was checked by interviewing the monitoring personnel to confirm that the management system is in place. The sales database was crosschecked with purchase order /14/, delivery notes /21/ and Salesforce data /49/ to confirm that information for any system installed/distributed (unique ID) is consistent between the records. The unique ID code of WPS is a combination of system type code, year code, country code and a serial number. The unique IDs of the WPS were checked for all the sampled systems surveyed during remote audit survey to ensure that no number is repeating in the database and the same system is not credited in any other CPA either, thus avoiding the double counting.</p> <p>The CME also has a customer care centre which contacts the institutions on a regular basis to ensure if the cartridge replacement (Ultra FLO/Multi-barrier UV) or new packets of tablets (Ultra TAB) are required or not.</p> <p>For data survey, a monitoring team was organized by the CME consisting of trained monitoring staff, who conducted the Aquagenx tests /18/, /30/, /43/ (water quality tests) and Usage surveys /18/. The CME's monitoring manager is responsible for QA/QC of the data, analysis and reporting in the monitoring report. QA/QC procedures were found being followed during the remote interviews and surveys. Scanned copies of purchase order /14/ and completed monitoring survey forms with test results /18/ were made available to the verification team for assessment of the information of institutions and survey and test results, in the sales data and monitoring data mentioned in ER Sheet /4/, /5/ respectively. Monitoring team staff were interviewed by the verification team regarding the monitoring procedures, using the water quality testing kits and filling the monitoring questionnaires. The staff explained the complete procedure followed for Aquagenx tests and the monitoring survey form filling. The evaluation of the water quality test is done at the CME country head-office. The verification team also checked training records of the monitoring & data recording personnel /20/.</p> <p>Based on the above assessment, it can be confirmed that the Implementation and operation of the management system has been done in line with the registered PoA DD /1/ and CPA DDs /2/.</p>
Findings	No findings were raised.
Conclusion	The verification team from the desk review and remote audit survey assessment confirms that the monitoring management system of the PoA is in place with the responsibilities properly identified and established.

E.2.3. Post-registration changes**E.2.3.1. Corrections**

No correction observed

E.2.3.2. Inclusion of a monitoring plan

N/A

E.2.3.3. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

N/A

E.2.3.4. Changes to the programme design

The request of approval of changes from the PoA as described in the registered PoA-DD was submitted by CME under the following request no. and approval date:

PRC request number	Approval Status	Date of Approval	Reference Link
PRC-9948-002	Approved	03/07/2017	https://cdm.unfccc.int/PRCContainer/DB/prcp445611461/view
PRC-9948-001	Approved	08/05/2017	https://cdm.unfccc.int/PRCContainer/DB/prcp266525508/view

E.2.3.5. Addition of CPA inclusion template

N/A

E.2.3.6. Change of coordination/managing entity

N/A

E.2.3.7. Changes specific to afforestation and reforestation activities

N/A

E.3. Component project activities**E.3.1. Compliance of the CPA implementation with the included CPA design document**

Means of verification	The registered PoA aims to provide safe drinking water to the institutions in Nigeria, Rwanda, Uganda and Kenya. The PoA is primarily designed to replace the existing fossil-fuel/non-renewable biomass 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 CPAs and has fully implemented the CPAs with the help of Sales and Distribution Partner (SDP). The same has been verified from the agreement between the CME and CPAI /15/. This monitoring period includes the implementation and monitoring of 16 CPAs (i.e. CPA 9948-P1-0004-CP1, and CPAs 9948-P1-0023-CP1 to 9948-P1-0037-CP1) in Kenya. The table below provides details on CPA and technology specific figures for this monitoring period:						
	CPA no.	Crediting period	No. of units (installed)			Estimated ERs	ERs achieved
			FL O	TA B	Multi-barrier UV		
	9948-P1-0004-CP1	02/07/2017 - 01/07/2024	0	0	138	5,716	-5
	9948-P1-0023-CP1	18/11/2018 - 17/11/2025	343	0	0	13,143	527
	9948-P1-0024-CP1	18/11/2018 - 17/11/2025	275	30	0	13,143	307
	9948-P1-0025-CP1	18/11/2018 - 17/11/2025	183	122	0	13,143	407
	9948-P1-0026-CP1	18/11/2018 - 17/11/2025	161	141	0	13,143	455
	9948-P1-0027-CP1	18/11/2018 - 17/11/2025	261	53	0	13,143	458
	9948-P1-0028-CP1	18/11/2018 - 17/11/2025	283	31	0	13,143	775
	9948-P1-0029-CP1	18/11/2018 - 17/11/2025	177	137	0	13,143	674
	9948-P1-0030-CP1	18/11/2018 - 17/11/2025	29	285	0	13,143	481
	9948-P1-0031-CP1	18/11/2018 - 17/11/2025	16	299	0	13,143	802
	9948-P1-0032-CP1	18/11/2018 - 17/11/2025	63	251	0	13,143	760
	9948-P1-0033-CP1	18/11/2018 - 17/11/2025	102	212	0	13,143	903
	9948-P1-0034-CP1	18/11/2018 - 17/11/2025	79	235	0	13,143	984
	9948-P1-0035-CP1	18/11/2018 - 17/11/2025	133	181	0	13,143	988
	9948-P1-0036-CP1	18/11/2018 - 17/11/2025	191	121	0	13,143	988
	9948-P1-0037-CP1	18/11/2018 - 17/11/2025	175	163	0	13,143	1,060
	-	Checked from the UN website /12/	Checked from sales database /5/			Checked from the ER sheet /4/	Checked from the ER sheet /4/
The start date of crediting period, inclusion dates of the CPAs were checked from the UN							

website /12/. The First WPS Installation dates were checked from the screenshots of salesforce database/49/.

PoA-DD page 59 says that “products deployed under the project activity are assumed be in operation as of the start of the next month following the date of sale”. Thus, any installation in the month of January 2020 will be eligible for crediting from the month of February 2020.

Given the current monitoring period is ending 21st March 2020, therefore only the units installed till the end of February 2020 (up to 29-February-2020) are eligible for crediting under the current monitoring period. Thus, the CME has considered 29-February-2020 as the cut-off date of installation for WPS during current monitoring period.

It has been checked by the verification team from the ER sheet /4/ that the ERs achieved for the CPAs lies between -5 tCO_{2e} and 1,104 tCO_{2e}, which is below the threshold of type III small-scale activity. It has been confirmed that:

1. Each of these CPAs achieves an annual emission reduction equal to or less than 60,000 tCO₂ equivalent per year thus complying with the applied methodology SSC threshold /6/,
2. Each of the technologies installed under these CPAs achieves an annual emission reduction equal to or less than 3,000 tCO₂ e per year (5% of the SSC limit) thus fulfilling the additionality criteria stated in the CPA DDs /2/ and PoA DD /1/.
3. Each of the independent subsystems/measures included in the CPA of a PoA is no larger than 1% of the small-scale thresholds defined by the applied methodology (i.e. not exceeding 600 tCO_{2e} for SSC type III methodologies) thus fulfilling the additionality criteria stated in the CPA DDs /2/ and PoA DD /1/.

The implementation of the CPA as mentioned above is within the geographical boundary of PoA-DD /1/, which has been verified through review of lat-long data, discussed already in Section E.2.1 above. Impact Carbon is the CME of the CPA and Impact Water is the CPAI /15/.

The reference number and the inclusion date of CPAs have been checked and verified from the UN website /12/ and the details are found correct and consistent. The start date of CPAs was confirmed from the delivery notes /21/ shared by the PP. The WPS are installed across the institutions within the boundaries of Kenya.

The aforesaid CPAs involve dissemination of two types of water purification systems:

1. Chlorination (UltraFLO / UltraTab)
2. Multi-Barrier UV

The technical description of the systems/28/ has been verified under E.2.1 of this report.

It is noteworthy, Multi-Barrier UV and UltraFLO systems are fixed type of water purification units and can only be installed when water is being procured through piped connection. These two WPS types can work only when they are mounted on a piped connection and water flows through them. Hence, the CPA DDs (section A.3.) and monitoring report (section C.1) correctly mention that Multi-barrier UV and UltraFLO are fixed type systems and applicable on piped water.

The ER sheet, worksheet titled ‘MP4 sales database’, column Q ‘Source’ lists the primary water source as surface water, wells etc. besides piped water. The term “piped” water under this column has been used for the schools which receive water from City Council / Government / Municipal Water Connections.

In case of UltraFLO and multibarrier UV systems, 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.

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, 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.

	<p>In case of UltraTAB, the schools which specify “Piped” as primary water source in column Q, indicate that although water is available via government piped network, but it is not connected with the drinking water storage tank(s). Thus, in such cases, the drinking water storage tank is un-piped making the school fit only for UltraTAB units.</p> <p>During the remote site visit conducted for the current issuance request, as well as, during the physical site-visit conducted for previous batches, it was clearly noted by the verification team that UltraFLO 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). For Multi-Barrier UV systems, since no samples were checked during the Remote SV, it was confirmed based on the manufacturer's specification/28/ that this type of unit can be fixed only on piped applications.</p> <p>Thus, all the systems have been implemented in line with the registered CPA DDs/2/.</p>
Findings	No findings were raised.
Conclusion	<p>a) The verification team is of the opinion that physical features of the CPAs have been implemented in accordance with the respective registered CPA-DDs /2/.</p> <p>b) No specific monitoring equipment had to be installed according to the monitoring plan.</p> <p>c) It is also confirmed through the remote audit survey and review of the supporting documentation that physical features of the CPAs included under this monitoring have been implemented in accordance with the respective CPA-DDs/2/.</p> <p>d) The CPAs were also found to be completely operational in line with the CPA-DDs. However, CME has sought a temporary deviation during the current MP for the systems that were fully consumed/ discontinued prior to the start of the current monitoring period. Also, temporary deviation has been sought as CME was unable to conduct the monitoring for the Multi-Barrier UV (Please refer to section E.3.2.1. of the report for details)</p> <p>e) The information provided in the relevant sections of the monitoring report appropriately describes the implementation and operational status of the PoA.</p>

E.3.2. Post-registration changes

E.3.2.1. Temporary deviations from the registered monitoring plan, applied methodologies, standardized baselines or other methodological regulatory documents

Following temporary deviations are proposed as part of this verification;

1. The CME has sought a temporary deviation during the current MP (i.e., 01/01/2020 to 21/03/2020) for the baseline emission calculation of Multi-Barrier UV systems as CME could not monitor these systems. Thus, conservatively, the CME has considered baseline emissions as 0 tCO₂e for all multi-barrier UV systems installed. Please refer to PRC validation report/55/ for details.
2. The CME has sought a temporary deviation during the current MP (i.e., 01/01/2020 to 21/03/2020) for the project emission calculation of Multi-Barrier UV systems. Thus, conservatively, the CME has considered applying maximum values of project emissions from all Multi-Barrier UV systems due to consumption of electricity. Please refer to PRC validation report/55/ for details.
3. The CME has sought a temporary deviation during the current MP (i.e. 01/01/2020 to 21/03/2020) for the systems in the database which were fully consumed/discontinued before the start of the current monitoring period and have not received subsequent supplies (operational days=0) have not been considered for sampling and monitoring. Thus, conservatively, the CME has considered 0 ERs from all such systems. Please refer to PRC validation report/55/ for details.

E.3.2.2. Corrections

Not applicable

E.3.2.3. Changes to the start-date of the crediting period

No changes to the start date of the crediting period.

E.3.2.4. Inclusion of a monitoring plan

Not Applicable

E.3.2.5. Permanent changes to the registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines, or other methodological regulatory documents

Not Applicable

E.3.2.6. Changes to the project design

Not applicable

E.3.2.7. Changes specific to afforestation and reforestation activities

Not Applicable

E.3.3. Compliance of the registered monitoring plan with applied methodologies and standardized baselines

Means of verification	The monitoring plan as contained in CPA-DDs /2/ were reviewed against the monitoring requirements of the applied methodology AMS-III.AV version 04 /6/ as well as PoA-DD /1/ with reference to the technology involved. Based on this review, it was found that the monitoring plan contained in the CPA DDs /2/ includes all the required parameters to be monitored in the context of the CPA design and description and allows proper determination of emission reductions in accordance with PoA DD /1/ and applied methodology AMS-III.AV version 04 /6/.
Findings	No findings were raised.
Conclusion	The monitoring plan is in line with the approved methodology AMS III A.V Ver.4 /6/, that is included in the CPA-DDs /2/.

E.3.4. Compliance of monitoring activities with the registered monitoring plan**E.3.4.1. Data and parameters fixed ex ante or at renewal of crediting period**

Case 1 or Case 2: Project activities implemented in rural or urban areas of countries with proportion of rural or urban population using an improved drinking-water source equal to or less than 60 % (Case1) or above 60% (Case2), Case1 or Case 2

Means of verification	The CPAs located in Kenya fall under Case 1. It was checked from CPA DD and study report MICS 2016-2017 that less than 60% of the country has access to clean drinking water, hence Case 1 is applied.
Findings	No findings were raised.
Conclusion	The value applied is found to be consistent with the registered CPA-DDs/2/ which is correct and justified.

Specific Heat of water, WH, Kj/L °C

Means of verification	The value of the parameter is fixed at the time of validation and the value has been sourced from Methodology A.M.S.-III.AV Ver.4 /6/. The value considered is 4.186 and is found to be consistent with the CPA-DDs /22/.
Findings	None.
Conclusion	The value in the MR /13/ and ER sheet /4/ are consistent with the registered PoA-DD /1/ & CPA-DDs /2/. The applied value is correct and justified.

Final Temperature, T_f(°C)

Means of verification	The value of the parameter is fixed at the time of validation and the value is sourced from the methodology AMS-III.AV version 4.0/6/. The value as available in MR is 100 °C which is found consistent with the values in CPA-DDs /2/.
Findings	None.
Conclusion	The value in the MR /13/ and ER sheet /4/ are consistent with the registered PoA-DD /1/ & CPA-DDs /2/. The applied value is correct and justified.

Initial Temperature, $T_i(^{\circ}\text{C})$

Means of verification	The value of the parameter is fixed at the time of validation and the value is sourced from the methodology AMS-III.AV version 4.0 /6/. The value considered is 20 °C and is found to be consistent with the CPA-DDs /2/.
Findings	None.
Conclusion	The value in the MR /13/ and ER sheet /4/ are consistent with the registered PoA-DD /1/ & CPA-DDs /2/. The applied value is correct and justified.

Latent heat of Water Evaporation, WHE, KJ/L

Means of verification	The value of the parameter is fixed at the time of validation and the value is sourced from the methodology A.M.S.III AV- version 4 /6/. The value considered is 2,260 KJ/L and is found to be consistent with the CPA-DDs /2/.
Findings	None.
Conclusion	The value in the MR /13/ and ER sheet /4/ are consistent with the registered PoA-DD /1/ & CPA-DDs /2/. The applied value is correct and justified.

Leakage, L

Means of verification	The value of the parameter is fixed at the time of validation and the value is sourced from the methodology AMS-I.E version 5.0 /25/. The value considered is 0.95 times baseline emission and is found to be consistent with the CPA-DDs /2/.
Findings	None.
Conclusion	The value in the MR /13/ and ER sheet /4/ is consistent with the registered PoA-DD /1/ & CPA-DD /2/. The applied value is correct and justified.

Average volume of drinking water per person per day, R_{yi} , Litres/Person/day

Means of verification	The value of the parameter is fixed at the time of validation and the value is sourced from the report WHO Minimum water quantity needed for domestic use in emergencies /24/. The value considered is 2 L (for non-boarding institutions) and 3.5 L (for boarding schools, prisons) and is found to be consistent with the CPA-DDs /2/.
Findings	None.
Conclusion	The value in the MR /13/ and ER sheet /4/ are consistent with the registered PoA-DD /1/ & CPA-DDs /2/. The applied value is correct and justified.

Emission Factor for electricity generation for source j in year y, $EF_{EL,j,y}$, tCO_2/MWh

Means of verification	The value of the parameter is fixed at the time of validation and the value is sourced from the "Tool 05: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation, Version 1.0" /50/. The value considered is 1.3 tCO_2/MWh and was found to be consistent with the CPA-DDs /2/.
Findings	No findings were raised
Conclusion	The value in the MR /13/ and ER sheet /4/ are consistent with the registered PoA-DD /1/ & CPA-DDs /2/. The applied value is correct and justified.

Average technical transmission and distribution losses for providing electricity to source j in year, $TDL_{j,y}$, Fraction

Means of verification	The value of the parameter is fixed at the time of validation and the value is sourced from the "Tool 05: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation, Version 1.0" /50/. The value considered is 20% which is a default value sourced from Tool 05 and was found to be consistent with the CPA-DDs /2/.
Findings	No findings were raised
Conclusion	The value in the MR /13/ and ER sheet /4/ are consistent with the registered PoA-DD /1/ & CPA-DDs /2/. The applied value is correct and justified.

E.3.4.2. Data and parameters monitored

Quantity of purified water in year y, QPW_y (liters/year):

Means of verification	Criteria/Requirements	Assessment/Observations
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
	Monitoring equipment	N/A
	How were the values in the monitoring report verified?	<p>The value applied is 50,387,712 Litres/year.</p> <p>The parameter is a calculated parameter determined through the following equation:</p> $QPW_y = \sum (T_{y,i} \times N_{y,i} \times R_{y,i} \times 365 \times \text{Water Quality}_i \times \text{Operational Units}_i)$ <p>The formula is correct and in line to the applied methodology /6/, PoA DD /1/ and CPA DDs /2/.</p> <p>The installation for CPAs under the verification has been done between 03/06/2017-29/02/2020.</p> <p>As per the page 59 of revised approved PoA DD/1/, "The date of installation for each unit is used to determine the portion of the monitoring period during which the unit was active. Products deployed under the project activity are assumed be in operation as of the start of the next month following the date of sale, i.e. if the date of sale is January 1st, the start of operation is February 1st."</p> <p>Thus, for all the systems installed in February 2020, ERs will be claimed in March 2020.</p> <p>The end date of the monitoring period is 21/03/2020.</p> <p>It shall be noted that the equation stated above, sourced from PoA DD, accounts for 365 days of crediting in a year (or for the duration of the monitoring period in case of shorter monitoring periods). However, the schools don't operate for 365 days in a year. Therefore, the CME has determined operational school days in the monitoring period, as per the academic school calendar issued by "Ministry of Education, Kenya"/57/ for ER calculations, (ER sheet, Tab MP4 school days/4/). For non-boarding schools, the weekend and school holidays (public holidays, mid-term and end term holidays) have been excluded as a conservative measure for consideration of operational school days. For Boarding schools, weekends and short public holidays have been included but the CME has excluded mid-term and end term holidays because the boarding students/staff would still consume water during weekends and short public holidays.</p>

		<p>The verification team reviewed the Kenyan school academic calendars (2020-21 and 2019-20) issued by the Ministry of Education, Kenya and found them to be presenting school opening and closure dates covering the entire monitoring period. The Verification team confirms that the calculation of school days in the ER sheet/4/ is correct, in accordance with the relevant academic calendars and results in conservative calculation of ERs.</p> <p>The ER sheet /4/ was checked to confirm that the formula has been applied correctly. The equation used for the calculation is correct and is sourced from paragraph 11 of the applied methodology /6/</p>
	If applicable, has the reported data been cross-checked with other available data?	N/A.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	N/A
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 2 to the CDM Project Standard?	Temporary deviation has been sought for CPA 04 (which contains Multi-barrier UV systems). Please refer section of this report E.3.2.1. and PRC validation report/55/ for the details.
Findings	CL#06 was raised and resolved. FAR#02 needs to be addressed in subsequent verifications.	
Conclusion	<p>The parameter has been monitored appropriately, in accordance with the registered monitoring plan /1/ (as per measurement methods and procedures to be applied) and applied methodology /6/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan /1/.</p> <p>FAR#02 has been raised for subsequent monitoring periods to ensure that QPW_y is determined accounting the operational school days (excluding holidays) instead of duration of the concerned monitoring period, as applicable.</p>	

Efficiency of water boiling system being replaced, η_{wb} , fraction

Means of verification	Criteria/Requirements	Assessment/Observations
	Measuring /Reading /Recording frequency	Continuously
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	N/A
	How were the values in the monitoring report verified?	<p>The parameter is determined by sourcing a default value from the applied methodology /6/ and multiplying it with the proportion of population of the institutions using different types of water boiling systems.</p> <p>The national data GACC - Kenya Market Assessment - Sector Mapping by GVEP International, 2012, page 47 /16/ and Biomass fuel market study, by EU-Nakuru County Sanitation Programme and Turnaround Africa Limited, 2016, page 17 /23/ were reviewed to confirm that 95% of the institutions boil water</p>

		<p>with unimproved biomass burning stoves (wood on traditional three stone fire), while 5% users use fossil fuel based water boiling practices.</p> <p>On the basis of above information, PP assigned weights to the population in terms of their usage fraction (i.e. 95% for unimproved biomass burning stoves and 5% for fossil fuel based stoves). For unimproved biomass burning stoves, methodological default value of efficiency (0.1) was taken, whereas for fossil fuel-based methods, 0.5 is considered.</p> <p>Now since weights are assigned on the basis of the user population, $95\% \times 0.1 + 5\% \times 0.5 = 0.12$.</p> <p>Therefore, the updated efficiency value of 0.12 for the baseline water boiling system is applied.</p>
	If applicable, has the reported data been cross-checked with other available data?	Yes. Sampled number of WPS (11) were surveyed. The head/deputy head teacher of the institutions were interviewed to know the treatment method used in the absence of the WPS installation. All interviewed people replied that unsafe drinking water was used from boreholes/wells and boiling water would have been the cheapest option to get safe drinking water. No other means were deemed affordable by the institutions.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	N/A
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 2 to the CDM Project Standard?	N/A
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /1/ (as per measurement methods and procedures to be applied) and applied methodology /6/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan /1/.	

Total distributed water purification systems, T_{y,i}, Number

Means of verification	Criteria/Requirements	Assessment/Observations
	Measuring /Reading /Recording frequency	Continuously
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	N/A
	How were the values in the monitoring report verified?	<p>The total number of systems distributed in the monitoring report are as following:</p> <p>2,471 UltraFLO</p> <p>2,261 UltraTAB</p> <p>138 Multi-Barrier UV</p>

		<p>The total number of systems reported in the monitoring report on which credits are being claimed are as following:</p> <p>550 UltraFLO</p> <p>935 UltraTAB</p> <p>0 Multi-Barrier UV</p> <p>The CME keeps purchase order /14/, delivery notes /21/ and details of each system on salesforce, and this was checked by the verification team with the help of documents provided by CME.</p> <p>Each unit of UltraFLO system has a unique ID, which is listed in the database and has been claimed for ERs.</p> <p>For UltraTAB system, the value of the parameter has been determined by considering each institution as a unit system. Therefore, for institutions with Ultra TAB, the number of tab systems is same as number of institutions.</p> <p>Again, each unit of Multi-UV Barrier has a UID, each of which has been listed in the database. However, ERs for Multi-Barrier UV are not being claimed.</p> <p>The total number of Multi-barrier UV systems was checked in the database. It was observed that there has been no distribution since the last monitoring period/40/ for which the sales had been verified already in MP3. Thus, no further evidence was sought to verify the total number of multi barrier UV systems in the sales data.</p> <p>The entries in database were checked to confirm the total number presented in the MR. 11 samples were remotely surveyed also, to confirm that the details of the entries in the database /4/,/5/ are correct.</p>
	If applicable, has the reported data been cross-checked with other available data?	Yes. Sampled number of WPS (11) were checked with the purchase orders /14/ and the delivery notes /21/.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 2 to the CDM Project Standard?	<p>Few of the distributed systems were fully consumed / discontinued before the start of the current MP and did not receive additional supplies during the monitoring period. As a temporary deviation, no ERs are being claimed for this concerned monitoring period.</p> <p>Please refer to PRC validation report/55/ for details.</p>
Findings	CAR#01 was raised and resolved.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /1/ (as per measurement methods and procedures to be applied) and applied methodology /6/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan /1/.	

The average population serviced by water purification systems, $N_{y,i}$, Persons/equipment

Means of verification	Criteria/Requirements	Assessment/Observations
	Measuring /Reading /Recording frequency	Continuously
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	N/A
	How were the values in the monitoring report verified?	<p>At the time of installation, the purchase order form is filled by the CME. This form /14/ notes down the total number of students and staff count in boarding/non-boarding institution.</p> <p>These numbers are mentioned for each institution in the sales database. Later the number is updated for all the institution on the salesforce based on the revised number checked by the customer care support team of Impact Water. For the 11 samples checked by the DOE during the remote audit survey, the same numbers were checked and found to be correct.</p> <p>The CME has also applied formula in the ER sheet /4/ to ensure that the $N_{y,i}$ multiplied by $R_{y,i}$ does not exceed the maximum output of the unit [per unit].</p> <p>An average value of all the adjusted $N_{y,i}$ has been used for ER calculation respective of each CPA. In general, the average of $N_{y,i}$ for all the CPAs was found to be 412 person/technology.</p> <p>The parameter value is noted at the time of installation by the CME and as the number of student/staffs change over the time, the value gets updated continuously. The institutions were checked to confirm that CME is recording this information in database and the implementation is in line with PoA DD /1/.</p> <p>As per the CPA DDs (9948-P1-0004, 9948-P1-0023-CP1 to 9948-P1-0037-CP1) /2/, The value of $N_{y,i}$ is effectively the number of people in the institution serviced per system. The number of people in the institution updated (at least biennially) to reflect change in the institution size over time. The value updated in the sales database biennially.</p> <p>For the current monitoring, the value of the parameter was verified from the sales database /5/ and salesforce database /49/. This parameter is neither prescribed nor monitored by CME on sample basis as per registered monitoring plan. The parameter is monitored on an absolute basis for each of the installation.</p>
	If applicable, has the reported data been cross-checked with other available data?	Yes. The values in the ER sheet /4/ were checked with remote audit survey observations by the DOE which was further cross-checked with the purchase orders /14/.

	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 2 to the CDM Project Standard?	N/A
Findings	CL#02 and CAR#02 were raised and resolved.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /1/ (as per measurement methods and procedures to be applied) and applied methodology/6/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan /1/.	

Water quality measurement, Water Quality, Proportion

Means of verification	Criteria/Requirements	Assessment/Observations
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	Aquagenx testing kits
	Calibration details	Not Applicable.
	How were the values in the monitoring report verified?	<p>The CME used Aquagenx testing kits to monitor the E. Coli value for sampled WPS.</p> <p>The Head teachers/ Deputy Head teachers of the schools interviewed by the DOE during the remote audit survey confirmed that they were visited by monitoring team for the tests.</p> <p>The monitoring forms /18/, Aquagenx testing kits photographs showing achieved results /30/ for all the institutions were checked by the verification team to confirm the monitoring parameter value. It was found that all the tests gave positive results confirming safe drinking water except three sampled schools. Hence, the applied value of 0.94 was found acceptable.</p>
	If applicable, has the reported data been cross-checked with other available data?	Photos of the tests /30/ conducted during the monitoring were shared by the CME which confirmed the results in monitoring forms.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The staff conducting the tests were found to be trained as confirmed from training evidence /20/ provided by the CME confirmed that the tests are conducted and evaluated by trained staff.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 2 to the CDM Project Standard?	Temporary deviation has been sought for CPA 04. Please refer section of this report E.3.2.1. and PRC validation report/55/ for the details.
Findings	CL#04 was raised and resolved.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered	

	monitoring plan /1/ (as per measurement methods and procedures to be applied) and applied methodology/6/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan /1/.
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Percentage of the monitoring period in which the units of each technology type are in use, Operational Units_i, Percentage

Means of verification	Criteria/Requirements	Assessment/Observations
	Measuring /Reading /Recording frequency	Once per verification
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	<p>Yes. During the current MP and in all the previous monitored periods, the monitoring frequency followed is found to be adhering to the methodology requirements and the monitoring plan.</p> <p>Further, the verification team also assessed the PoA validation report CAR 07, page 80 of 106 which confirms that “atleast once per verification” is superseded by “biennial” and the methodology requirements prevails.</p> <p>However, to ensure that under no circumstances, the methodology requirement is compromised in future, FAR#01 has been raised to ensure that monitoring frequency of parameter “operational units_i”, shall be at least biennial, in line with monitoring methodology requirements.</p>
	Monitoring equipment	N/A
	How were the values in the monitoring report verified?	<p>The sampled institutions were visited by the CME's monitoring team to monitor the operational status of the WPS units installed/distributed in the institutions as checked from the monitoring survey forms /18/.</p> <p>The Head teachers/ dy. Head teachers at the schools visited by the CME representative during the monitoring survey confirmed to the DOE team through the remote audit survey that the CME monitoring team visited the school for the monitoring and the system is operational as reported in the monitoring result.</p> <p>Results presented in the ER sheet were checked with monitoring survey forms /18/ and remote audit survey visit video recordings.</p> <p>94.02% of the water purification systems from the total systems visited by the CME representative during the monitoring survey were found to be operational.</p> <p>Thus, the applied value of 94.02% was found acceptable.</p>
	If applicable, has the reported data been cross-checked with other available data?	Results presented in the ER sheet were checked with monitoring survey forms /18/ and remote audit survey visit video recordings.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The staff conducting the tests were found to be trained as confirmed from training evidence /20/ provided by the CME confirmed that the tests are conducted and evaluated by trained staff.
	In case project participants have	Temporary deviation has been sought for CPA4.

	temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 2 to the CDM Project Standard?	Please refer section of this report E.3.2.1. and PRC validation report/55/ for the details.
Findings	CL#03 was raised and resolved. FAR#01 needs to be addressed in subsequent verifications.	
Conclusion	<p>The parameter has been monitored appropriately, in accordance with the registered monitoring plan /1/ (as per measurement methods and procedures to be applied) and applied methodology /6/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan /1/.</p> <p>FAR#01 has been raised for subsequent monitoring periods to ensure that monitoring frequency for the parameter Operational Units; is atleast, biennial, in line the with monitoring methodology requirements.</p>	

Fraction of woody bio-mass saved by the project activity in year, y, that can be established as non-renewable biomass using national or local statistics, survey results, studies, maps or other sources of information, such as remote- sensing data, f_{NRB} , Fraction

Means of verification	Criteria/Requirements	Assessment/Observations
	Measuring /Reading /Recording frequency	Continuously
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	N/A
	How were the values in the monitoring report verified?	<p>The PoA applies CDM SSC methodology AMS-III.AV: "Low greenhouse gas emitting safe drinking water production systems" (Version 4.0) /6/. The applied methodology, on page 6, refers to determining f_{NRB} based on the relevant provisions of "AMS-I.E: Switch from Non-Renewable Biomass for Thermal Applications by the User" /25/.</p> <p>Further, it states that "If the displaced fuel is fossil fuel, use a default value of 1.0. If a mixture of woody biomass and fossil fuels is used in the absence of the project activity, a weighted average value (e.g. based on energy content of fuels consumed) should be used" /25/.</p> <p>"AMS-I.E: Switch from Non Renewable Biomass for Thermal Applications by the User" version 5.0, page 2, states that $f_{NRB,y}$ can be established as non-renewable biomass using survey methods or government data or approved default country specific fraction of non-renewable woody biomass (f_{NRB}) values available on the CDM website /44/. Also, as per Clarification on monitoring the quantity of biomass and the fraction of non-renewable biomass under AMS-I.E. (submitted 17 Jun 11): SSC_543, the value of $f_{NRB,y}$ can be fixed ex ante at the beginning of each crediting period /45/.</p> <p>The CME, therefore, fixed the value of f_{NRB} for Kenya through EB67 Annex 22 /32/ (extension SSC 37 Annex 14th, approved in EB68) /38/ as</p>

stated in the registered PoA-DD /1/ at page 69, 82, 100, and 115. However, the $f_{NRB,y}$ was listed as monitoring parameter to allow determination of a weighted average value in case a mixture of woody biomass and fossil fuels is used in the absence of the project activity in line with AMS III.AV. version 4.0, page 6 /6/.

The PoA-DD version 7.0 (Section B.7.1.) /1/ states the $f_{NRB,y}$ as a calculated parameter which has a formula:

$$f_{NRB,y} = [\text{Default } f_{NRB} \text{ value}] * [\% \text{ of users using NRB}] + [1.0^{21}] * [\% \text{ of users using fossil fuels}]$$

The aforesaid formula only keeps the % of users (using NRB / fossil fuel) as a variable and considers f_{NRB} values as a constant (default for NRB and 1.0 for fossil fuel). Thus, the parameter is listed as monitoring parameter only because of the variability attributed to % users using a given baseline fuel type.

Since the default value of f_{NRB} has been considered as a constant, the expiry of f_{NRB} value is deemed not applicable to the PoA and included CPAs. Besides, no other method to determine the value f_{NRB} is found listed under section B.7.1 of the registered PoA DD /1/.

Additionally, the CME will not apply the updated value of f_{NRB} (i.e., if the host country DNA publish a new value) within this crediting period as it is bound by the requirement stated in the PoA DD (page 69, 82 and 100,115) /1/. This also confirms that only % of users is variable in the monitored parameter.

The parameter is determined by sourcing a default value from UNFCCC SSC WG 37th Meeting Report for Kenya /26/ and multiplying it with the percentage of population using non-renewable woody biomass/fossil fuel.

Biomass Fuel Market Study dated August 2016 /23/, which used as a source of national data was reviewed to confirm that distribution of various fuel used in Kenya are as follows:

Description	Percentage of users as checked from /26/	Default value of efficiency from AMS-III.A.V. /6/, EB 37 Annex 14 /26/
NRB users	95%	0.92
Fossil fuel users	5%	1.00

The weighted average value applied value was 0.924 and found to be correct.

The Default value of f_{NRB} from UNFCCC SSC

²¹ In line with page 6 of AMS III.AV. - If the displaced fuel is fossil fuel use a default value of 1.0

		<p>WG 37th Meeting Report for Kenya is prescribed by EB 67 annex 22 as per para 3 of SSC WG 37th annex 14. The value sourced from this document was valid till 18/09/2017.</p> <p>The PoA DD dated 18/04/2017 listed the parameter fNRB as monitored parameter but has a provision added that only '% of users' need to be determined at CPA level. The default value of fNRB was already fixed at PoA level as checked from the registered PoA DD. The default value sourced from SSC WG 37th annex 14 was valid at the time it was fixed at the PoA Level. The value doesn't require to be updated at the CPA level for any CPA included in the PoA, as per the registered PoA-DD, unless the PoA/CPA is renewed. Thus, the concerned CPAs included under the registered PoA-DD, on a date after 18/09/2017 are eligible to use the fNRB value fixed in the registered PoA DD.</p> <p>Thus, in-line to para 346 of the VVS for PoA it was confirmed that CME has followed the registered monitoring plan stated in the registered PoA-DD /1/, included CPA-DDs /2/ and the applied methodology for monitoring the parameter.</p>
	If applicable, has the reported data been cross-checked with other available data?	N/A
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	N/A
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 2 to the CDM Project Standard?	N/A
Findings	CL#01 was raised and resolved.	
Conclusion	The values in the Monitoring Report /13/ and corresponding Emission Reduction Spreadsheet /4/ are consistent with the revised accepted PoA-DD /1/ and CPA-DDs /2/. The values applied for ER calculations /4/ in the relevant CPAs are correct and justified.	

Emission factor as per AMS-I.E. procedures when NRB is displaced or the emission factor of the fossil fuel substituted, $EF_{\text{projected_fossil fuel, tCO}_2/\text{TJ}}$

Means of verification	Criteria/Requirements	Assessment/Observations
	Measuring /Reading /Recording frequency	Continuously
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	N/A
	How were the values in the monitoring report verified?	The CPA DDs /2/ state that the parameter should be determined by applying Default values as per AMS-I.E. /25/ and IPCC /22/ combined with

		<p>survey, national, or regional data to determine the percent of users using different types of fuels displaced.</p> <p>During the current monitoring period, the parameter is determined by sourcing a default emission factor value from the applied methodology /25/ and EB67 Annex 22 /32/ and multiplying it with the proportion of population of the institutions using different type of fuel, as sourced from national data.</p> <p>Biomass fuel market Study dated August 2016 /23/, which used as a source of national data was reviewed to confirm that distribution of various types of fuels displaced in Kenya are as follows:</p> <table border="1" data-bbox="847 658 1445 909"> <thead> <tr> <th>Description</th> <th>Percentage of users as checked from meeting report for Kenya/26/</th> <th>Default value from AMS-I.E. /25/ and IPCC /22/</th> </tr> </thead> <tbody> <tr> <td>NRB users</td> <td>95.0%</td> <td>81.6</td> </tr> <tr> <td>Fossil fuel users</td> <td>5.0%</td> <td>56.1²²</td> </tr> </tbody> </table> <p>The average weighted value of 80.33 was applied for the current monitoring period which is deemed correct.</p> <p>The applied value was found to be correct. The value has been determined is in line with the PoA DD /1/ and CPA DDs /2/.</p>	Description	Percentage of users as checked from meeting report for Kenya/26/	Default value from AMS-I.E. /25/ and IPCC /22/	NRB users	95.0%	81.6	Fossil fuel users	5.0%	56.1 ²²
Description	Percentage of users as checked from meeting report for Kenya/26/	Default value from AMS-I.E. /25/ and IPCC /22/									
NRB users	95.0%	81.6									
Fossil fuel users	5.0%	56.1 ²²									
Findings	If applicable, has the reported data been cross-checked with other available data?	Yes. The value sourced from AMS-I.E. /25/ was also cross-checked from the IPCC greenhouse gas inventories report /22/.									
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes.									
Conclusion	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 2 to the CDM Project Standard?	N/A									
	CAR#03 was raised and resolved.										
	The values in the Monitoring Report /13/ and corresponding Emission Reduction Spreadsheet /4/ are consistent with the revised accepted PoA-DD /1/ and CPA-DDs /2/. The values were found consistent with IPCC default values for fossil fuels /22/. The applied values are correct and justified.										

Existence of public distribution network of safe drinking water, Fraction, Existence of public distribution network of safe drinking water in year y, Fraction

Means of verification	Criteria/Requirements	Assessment/Observations
	Measuring /Reading /Recording	Annually

²² To apply a conservative estimate of CERs, all fossil fuel used was assumed as Natural Gas. Since Natural Gas has the lowest emission factor, it is therefore a conservative approach.

	frequency	
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	N/A
	How were the values in the monitoring report verified?	<p>The sampled institutions visited by the CME's monitoring team to check the existing public distribution network with safe drinking water as checked from the monitoring survey forms /18/. Results presented in the ER sheet were checked with monitoring survey forms /18/</p> <p>The DOE checked 11 samples from CME's samples to confirm the survey results. The Head teachers/ dy. Head teachers of the schools were interviewed by the DOE through the telephonic interview and confirmed that the monitoring team visited the school for the monitoring.</p> <p>All the institutions of sampled WPS confirmed that their school does not have access to public distribution network of safe drinking water and they source the water from borewell/saved rainwater.</p> <p>Besides, a review of other monitoring survey forms and sales database indicated that safe drinking water based public distribution network was not accessible to project schools.</p> <p>Thus, the applied value of 0 was found acceptable for the current verification.</p>
	If applicable, has the reported data been cross-checked with other available data?	Results presented in the ER sheet were checked with monitoring survey forms /18/ and DOE remote audit survey.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	The staff conducting the surveys were interviewed during the remote audit survey and training evidence /20/ provided by the CME confirmed that the surveys are conducted and evaluated by trained staff.
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 2 to the CDM Project Standard?	Temporary deviation has been sought for CPA 04. Please refer section of this report E.3.2.1. and PRC validation report/55/ for the details.
Findings	CL#05 was raised and resolved.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /1/ (as per measurement methods and procedures to be applied) and applied methodology /6/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan /1/.	

**Quantity of electricity consumed by the project electricity consumption source j in year y,
EC_{PJ,j,y}, MWh/yr**

Means of verification	Criteria/Requirements	Assessment/Observations
	Measuring /Reading /Recording frequency	Annually

	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
	Monitoring equipment	N/A
	How were the values in the monitoring report verified?	The power rating capacity of the Multi-barrier UV WPS device was found to be 14 watts as checked from the WPS manufacturer specification for Multi-barrier UV /28/. Thus, taking an assumption, the technology was considered operational for 24 hours a day and for full length of the monitoring period (81 days) in the current monitoring period. Thus, the applied value of 0.027 MW was found to be conservative and acceptable for the current verification.
	If applicable, has the reported data been cross-checked with other available data?	Not applicable
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	N/A
	In case project participants have temporarily not monitored the parameter, has either i) a deviation been approved by the CDM EB or ii) has the parameter been estimated as stipulated by Appendix 2 to the CDM Project Standard?	Temporary deviation has been sought for CPA 04. Please refer section of this report E.3.2.1. and PRC validation report/55/ for the details.
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the registered monitoring plan /1/ (as per measurement methods and procedures to be applied) and applied methodology /6/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan /1/.	

E.3.4.3. Implementation of sampling plan

Means of verification	<p>The monitoring has been carried out in accordance with the monitoring plan contained in the revised approved PoA DD /1/ and CPA DDs /2/.</p> <p>Sampling Design/Target Population/Sampling Frame/Reliability:</p> <p>The CME has applied single sampling plan for all of the CPAs monitored under the current monitoring period. According to the 'Sampling and Survey standards,' version 8.0 /19/, the sampling plan applied by the PP for the following CPAs are found to be appropriate. As per the sampling plan stated in the PoA DD /1/, a minimum 90% confidence interval and a 10% margin of error requirement are achieved for the sampled parameters. When a single sampling plan covers a group of CPAs or when monitoring is conducted biennially (every two years), confidence/precision of 95/10 for the sample size calculation is applicable. Since the sampling has been done across the CPAs, the CME has taken 95/10 as the confidence precision levels which is found to be in line with the registered monitoring plan /1/.</p> <p>The target population for the parameters stated above are Water purification systems²³ installed/distributed in institutions and recorded in the project sales database. There are three different types of units under the CPAs. 2,471 UltraFLO</p>
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²³ The definition of each system considered for ER is different for Ultra FLO and Ultra Tab. Each unit of Ultra FLO having unique ID as listed in the database, is considered as individual system for CER calculations. For Ultra TAB, the value of the parameter has been determined by considering each institution as one system. Therefore, for institutions with Ultra TAB, the number of TAB systems is same as the number of institutions.

units, 2,261 UltraTAB units and 138 Multi-barrier UV have been listed in the sales database. However, the parameters for monitoring are homologous (i.e. implemented in schools). Thus, the CME has applied a common sampling for all the parameters monitored which were found acceptable.

Sampling Frame:

The systems that were fully consumed/discontinued before the start of monitoring period neither have received subsequent supplies during the monitoring period have not been considered for sampling and have been excluded from sampling frame. The systems considered for sampling consists of 550 UltraFLO units, 935 UltraTAB units and 113 Multi-barrier UV²⁴ units. Thus, the sampling frame covers 550 UltraFLO units and 935 UltraTAB units only.

Sampling Method and selection:

The CME has applied Stratified Random Sampling by dividing the population into two strata (UltraFLO, UltraTAB,). The samples have been chosen randomly from two stratas as checked from evidence provided against random number generation /33/.

Sample Size for Parameter of Interest:

The sampling is applied to the following monitoring parameters:

- Water Quality- Aquagenx Tests
- Operational Units
- Existence of public distribution network of safe drinking water

The sample size is chosen using the equation inline to CDM guidelines for Sampling and surveys for CDM project activities and programmes of activities /31/.

In this regard, sample size calculation spreadsheet /4/ was checked and found correct as per registered monitoring plan. The complete details are given in E.3 section of Monitoring Report /13/.

Implementation of Sampling Survey and Field Test Records:

Based on interviews with the CME and surveyors during the remote audit survey, in addition to simply asking this question to the end users, the surveyors were also trained to evaluate to results of Aquagenx tests. Therefore, the implementation of surveys and tests was considered reliable. The surveyors also took photos of the school name, test results which were checked during the desk-review by the verification team.

Monitoring survey (by CME) duration:

The monitoring survey (field survey / tests) was carried out by CME representatives between following duration for the current monitoring period.

CPA Ref.No.	Technology	From	To
9948-P1-0023-CP1 to 9948-P1-0037-CP1	Water Purification systems	03/08/2020	11/08/2020

Reliability and precision calculation:

The verification team has verified the ER calculation spreadsheets /4/ with the monitored data, where the actual achieved precision is calculated against the Guidelines outlined under Guidelines for sampling and surveys for CDM project activities and programme of activities /31/ and confirms that the calculation of achieved reliability was done correctly.

All parameters of interest are included in the ER spreadsheet for the revised approved CPAs. 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 /4/ corresponding to final

²⁴ Multi Barrier UV systems were not monitored. Please refer section E.3.2.1 of this report.

	Monitoring Report /13/, which were also found correct. Thus, the verification team confirms that required precision has been met and the results are reliable.
Findings	CAR#01 was raised and resolved.
Conclusion	The verification team has found out that the sampling plan applied is found to be in-line with the monitoring plan mentioned in the registered PoA-DD /1/ and CPA-DDs /2/ and Sampling and survey guidelines /31/

E.3.5. Compliance with the calibration frequency requirements for measuring instruments

Means of verification	No monitoring equipment is required as outline in the CPA-DDs /2/ and revised accepted PoA-DD /1/.
Findings	None.
Conclusion	The verification team has determined that no monitoring equipment has been used by the CME that requires calibration. Furthermore, there was no requirement of calibration in the CPA-DDs /2/. This was in accordance with the accepted monitoring plan and the applied monitoring methodology /6/.

E.3.6. Assessment of data and calculation of emission reductions or net removals

E.3.6.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	The following equations were used to determine the baseline emissions as provided in the monitoring report /13/ and applied in the corresponding ER calculations sheet /4/. The expressions used were found consistent with the revised accepted PoA DD /1/, CPA DDs /2/ and the applied methodology AMSIII.AV, version 04 /6/:	
	$BE_y = QPW_y * SEC * f_{NRBy} * EF_{\text{projected_fossilfuel}} * 10^{-9}$	
	Where,	
	BE _y	Baseline emissions during the year y in (tCO ₂ e)
	QPW _y	Quantity of purified water in year y (Liters/yr).
	SEC	Specific energy consumption required to boil one litre of water (kJ/L)
	f _{NRB,y}	<p>Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable.</p> <p>For biomass, the default values of f_{NRB} shall be used from EB67. A survey, national, or regional data is conducted to determine the mix of fuels (% of biomass, % of other fuels) used in the baseline. If a mixture of biomass and other fuels (e.g. fossil fuels) are used, a weighted average renewability factor shall be applied.</p>
	EF _{projected_fossilfuel}	<p>Emission factor when NRB is displaced or the emission factor of the fossil fuel substituted</p> <p>Default emission factors from AMS-I.E as referenced in AMS-III.AV version 4 and IPCC shall be used. A survey, national, or regional data is conducted to determine the mix of fuels (% of biomass, % of other fuels) used in the baseline. If a mixture of woody biomass and fossil fuels are used in the absence of the project activity a weighted average value shall be applied, as described in parameter box in section E.2</p>
	Specific energy consumption (SEC) i.e. energy required to boil one litre of water is calculated as	
	$SEC=[WH*(T_f-T_i) + 0.01*WHE] / n_{wb}$	
Where		
WH	Specific heat of water (kJ/L °C)	

T_f	Final temperature (°C)
T_i	Initial temperature of water (°C)
WHE	Latent heat of water evaporation (kJ/L)
n_{wb}	Efficiency of water boiling system being replaced (fraction)

And QPW_y is calculated through following equation:

$$QPW_y = \sum (T_{y,i} \times N_{y,i} \times R_{y,i} \times 365 \times \text{Water Quality}_i \times \text{Operational Units}_i)$$

As per the page 59 of revised approved PoA DD/1/, “The date of installation for each unit is used to determine the portion of the monitoring period

during which the unit was active. Products deployed under the project activity are assumed be in operation as of the start of the next month following the date of sale, i.e. if the date of sale is April 1st, the start of operation is May 1”

Thus, for all the systems installed in Feb 2020, ERs will be claimed in March 2020. The end date of the monitoring period is 21/03/2020.

The applicable formula is:

$$QPW_y = \sum (T_{y,i} \times N_{y,i} \times R_{y,i} \times 48 \times \text{Water Quality}_i \times \text{Operational Units}_i) \text{ for CPAs 9948-P1-0023-CP1 to 9948-P1-0037-CP1}$$

Where:

QPW_y : Quantity of purified water for drinking for all technologies type i in year y (Liters)

$T_{y,i}$: Total distributed water purification systems

$R_{y,i}$: Average volume of drinking water per person per day (Liters/person/day)

Water Quality_i : Proportion of units that meet water quality requirements

Operational Units_i : Percent of the monitoring period in which the units are in use

$N_{y,i}$: The average population serviced by water purification systems(Persons/equipment)

Number of days: The equation in CPA DDs uses 365 days (or the duration of monitoring period in case of less than annual monitoring period) for calculating QPW_y . However, instead of using the duration of monitoring period, the CME has conservatively used operational school days determined as per academic school calendar issued by “Ministry of Education, Kenya”/57/. For non-boarding schools, the weekend and school holidays have been excluded as a conservative measure and for boarding schools, weekends and public holidays have been included but the CME has excluded mid-term and end term holidays because the boarding students/staff would still consume water during weekends and short public holidays as checked in the ER sheet /4/.

Residual capacity considered in the ER sheet:

The DOE checked the ER sheet and confirmed that the values of ‘residual capacity from previous MP’ in MP4 ER spreadsheet (tab: “MP4 Sales data, column AB) were verified to be correctly calculated after cross-checking with MP3 ER calculator, the verification team further confirms the following:

In the revised MP4 ER Calculator, the MP3 Sales database has been added (Tab: ‘MP3 Sales data – reference only’) by the CME. The verification team has verified that information in the revised ER Calculator, Tab: ‘MP3 Sales data – reference only’ is 100% consistent with the tab: ‘Sales database’ in the MP3, ER calculator available at UN webpage/56/.

Further, in the revised ER calculator, tab ‘MP4 Sales database’ column AB, the residual capacity from previous MP has been found to be correctly linked with ‘MP3 Sales data – reference only’, column AL, thus establishing complete traceability.

The verification team has independently checked MP3 ER calculator from PoA page (9948-MP3-IRP4) and cross-verified the information in the revised ER Calculator,

Tab: 'MP3 Sales data – reference only' and found it to be consistent.

In the revised ER calculator, 'MP4 sales database', column AB, for all systems newly installed, the 'residual capacity from previous MP' is also found to be correctly specified as "new installation, not applicable".

Thus, 'residual capacity from previous MP' is confirmed to be calculated correctly in column AB of MP4 Sales database for all schools.

Subsequent supplies:

The total subsequent supplies to any school during the monitoring period are depicted under column AC of the worksheet titled "MP4 sales database". If the residual capacity is high and sufficient for the concerned monitoring period, then no new supplies are required to be sent to the schools.

The schools which have '0' residual capacity (see under column AB, MP4 sales database/4/) in the current MP along with 0 subsequent supplies(see under column AC, MP4 sales database/4/), were verified to have 0 crediting school days column AO, thus substantiating that no ERs have been claimed for such cases(see column AP, MP4 sales database/4/).

For other systems the operational days have been calculated accounting initial / residual capacity and subsequent supplies as applicable.

The verification team has verified all corresponding calculations and found them accurate and correct. Thus, it was confirmed that the CME has followed the implementation plan stated in the CPA DDs and claimed ERs only for the systems that are rendering clean water during the current monitoring period by virtue of their residual capacity from previous MP and/or subsequent supplies and/or initial installation capacity, as applicable.

Lifetime of Ultra FLO and Ultra Tab units in ER sheet/4/):

The verification team further confirmed that Multi-Barrier UV lifetime is 7 years and for UltraFLO/UltraTAB expiry is 5 years/28/. The first system was installed in June 2017 in Kenya, thus no device will expire before the end of the current monitoring period.

Other Determinants

The continuous running end date was merely a determinant to check compliance with the registered monitoring plan requirement and is not linked with lifetime of the installed devices. The same has been removed by the CME from the revised ER sheet to avoid any confusion.

The revised ER sheet tab, 'MP4 Sales Database' now ensures that $(N_{y,i} * R_{y,i})$ * operational school days in the monitoring period, do not exceed the available treatment capacity for any school (column AH). It also confirms that the total consumed capacity (column AM) remains lower of the two in all cases. This is a better approach

The total consumed capacity during the monitoring period (column AM), residual capacity at the end of MP (column AN) and credited operational school days (column AO) have been correctly calculated.

The verification team has checked all determinants from column AH:AP and confirms them to be correctly and accurately calculated and is conservative with respect to ER calculations.

The verification team has checked all determinants (column AH:AP) and confirms them to be correctly and accurately calculated and conservative with respect to ER calculations.

	<p>From the review of the MR and the Baseline Emission calculations provided in the ER Sheet, the aggregate baseline emissions come out to be 11,132 tCO_{2e}. The calculations for all the CPAs (9948-P1-0023-CP1 to 9948-P1-0037-CP1) were checked in the ER sheet /4/ and it was found that calculations have been done inline to the PoA DD /1/ and in accordance to the applied methodology /6/. For CPA 9948-P1-0004-CP1 temporary deviation has been sought/55/. The achieved emission reductions in the current monitoring period thus are confirmed to be conservative, accurate and credible.</p> <p>All the parameters are assessed in detail under section E.3.4. of this report</p>
Findings	CAR#04 was raised and resolved.
Conclusion	<p>The verification team confirms that</p> <ol style="list-style-type: none"> The complete data was available and is duly reported; As indicated above, the description with regard to cross-check of reported data is included under respective parameter above; Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals were followed; Appropriate emission factors, IPCC default factors and other reference values were correctly applied. There is no pro-rata approach applied in the current monitoring period as entire monitoring period falls into period that is after the end of first commitment period of Kyoto Protocol.

E.3.6.2. Calculation of project GHG emissions or actual net GHG removals by sinks

Means of verification	<p>The project activity involves no emissions for type 2 CPAs as it involves dissemination of water purification systems and replaces the non-renewable woody biomass fossil fuel way of boiling water with the transitioned way of water purification by the chlorination technologies. The project emissions for type 3 CPAs were found to be calculated as follows:</p> $PE_y = T_{y,i} \times EC_{PJ,j,y} \times EF_{EL,j,y} \times (1 + TDL_{j,y})$ <p>From the review of the MR and the Project Emission calculations provided in the ER Sheet, the aggregate project emissions come out to be 5 tCO_{2e}.</p>
Findings	None.
Conclusion	The project emissions are not applicable for Type 2 CPAs, but have been considered for Type 3 CPAs, as applicable. The approach is in line with the PoA DD /1/.

E.3.6.3. Calculation of leakage GHG emissions

Means of verification	<p>The PoA-DD /1/, CPA DDs /2/ and applied monitoring methodologies does not prescribe any leakage emissions to be considered. The remote audit survey and project design also did not reveal any potential source to be considered in this regard. However, the leakage adjustment factor that is required to adjust the baseline emissions has been duly accounted in baseline calculations.</p> <p>BE_y is multiplied by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required. Therefore, the leakage is calculated as follows:</p> $\text{Leakage} = BE_y \times (1-95\%)$ <p>The verification team has checked that the calculation for CPAs included (9948-P1-0004-CP1, and 9948-P1-0023-CP1 to 9948-P1-0037-CP1) have also been done in the worksheet 'ERs Summary' /4/ in the same manner.</p> <p>The calculations for all the CPAs (9948-P1-0004-CP1, 9948-P1-0023-CP1 to 9948-P1-0037-CP1) were checked in the ER sheet /4/ and it was found that calculations have been done inline to the PoA DD /1/ and in accordance to the applied</p>
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	methodology /6/.
	The cumulative verified value of Leakage for all the CPAs is 563 tCO _{2e} . The value is mentioned CPA wise in the table presented under the below section (E.3.6.4) of this report.
Findings	None.
Conclusion	No additional leakage emissions (other than what is already considered in baseline calculations) were required in accordance with the methodology AMS-III.AV, version 04 /6/.

E.3.6.4. Summary of calculation of GHG emission reductions or net GHG removals by sinks

Means of verification	<p>As elaborated above, the entire emission reductions from the PoA were based on baseline emissions. The calculations presented in this regard in the final monitoring report /13/ and corresponding ER calculations sheet /4/ were found appropriate and comply with the provisions prescribed in the registered monitoring plan of respective CPA-DDs /2/, PoA-DD /1/ and applied methodology /6/.</p> <p>The verification team confirms that from the remote audit survey where all the evidence and records that validated the stated figures were checked and found acceptable.</p>
Findings	None.
Conclusion	<p>The verification team confirms that</p> <p>a) The complete data was available and is duly reported.</p> <p>b) As indicated above, the description with regard to cross-check of reported data is included under the respective parameter (refer Section E.5.4 of this report);</p> <p>c) Appropriate methods and formulae for calculating baseline GHG emissions or baseline net GHG removals, project emissions and leakage emissions were followed.</p> <p>d) The total number of ERs achieved (on account of water purifiers installation/distribution) during the current monitoring period were 10,564 tCO_{2e}.</p>

Title and UNFCCC reference number of the CPA	Baseline emissions or baseline net GHG removals by sinks (tCO _{2e})	Project emissions or actual net GHG removals by sinks (tCO _{2e})	Leakage (tCO _{2e})	GHG emission reductions or net GHG removals by sinks (tCO _{2e})		
				Amount achieved before 1 January 2013	Amount achieved from 1 January 2013	Amount achieved in the entire monitoring period
9948-P1-0004-CP1	-	5	-	0	-5	-5
9948-P1-0023-CP1	555	-	28	0	527	527
9948-P1-0024-CP1	324	-	17	0	307	307
9948-P1-0025-CP1	429	-	22	0	407	407
9948-P1-0026-CP1	479	-	24	0	455	455
9948-P1-0027-CP1	483	-	25	0	458	458
9948-P1-0028-CP1	816	-	41	0	775	775
9948-P1-0029-CP1	710	-	36	0	674	674
9948-P1-0030-CP1	507	-	26	0	481	481
9948-P1-0031-CP1	845	-	43	0	802	802
9948-P1-0032-CP1	800	-	40	0	760	760
9948-P1-0033-CP1	951	-	48	0	903	903
9948-P1-0034-CP1	1,036	-	52	0	984	984

9948-P1-0035-CP1	1,041	-	53	0	988	988
9948-P1-0036-CP1	1,040	-	52	0	988	988
9948-P1-0037-CP1	1,116	-	56	0	1,060	1,060
Total	11,185	5	566	0	10,564	10,564

E.3.6.5. Comparison of actual GHG emission reductions or net GHG removals by sinks with estimates in included CPA

Means of verification	<p>Earthood Services Private Limited is able to certify that the emission reductions from the CDM project activity 9948 "Impact Carbon Global Safe Water Programme of Activities (PoA)" in Kenya for the monitoring period 01/01/2020 – 21/03/2020 (including both days) amount to 10,564 tCO₂.</p> <p>Verified and certified emission reductions as per commitment period:</p> <table> <tr> <th>Commitment period</th><th>Amount</th></tr> <tr> <td>Upto 31/12/2012 (1st commitment period)</td><td>0 tCO₂e</td></tr> <tr> <td>From 01/01/2013</td><td>10,564 tCO₂</td></tr> </table>	Commitment period	Amount	Upto 31/12/2012 (1 st commitment period)	0 tCO ₂ e	From 01/01/2013	10,564 tCO ₂
Commitment period	Amount						
Upto 31/12/2012 (1 st commitment period)	0 tCO ₂ e						
From 01/01/2013	10,564 tCO ₂						
Findings	None.						
Conclusion	The actual ERs achieved in included CPAs are not higher than the estimated quantity of ERs in the CPA-DDs /2/. Accordingly, it was accepted by verification team.						

Title and UNFCCC reference number of the CPA	Actual values achieved by the CPAs during this monitoring period	Value estimated in ex ante calculation in the included CPA-DD(s)
9948-P1-0004-CP1	-5	5,716
9948-P1-0023-CP1	527	13,143
9948-P1-0024-CP1	307	13,143
9948-P1-0025-CP1	407	13,143
9948-P1-0026-CP1	455	13,143
9948-P1-0027-CP1	458	13,143
9948-P1-0028-CP1	775	13,143
9948-P1-0029-CP1	674	13,143
9948-P1-0030-CP1	481	13,143
9948-P1-0031-CP1	802	13,143
9948-P1-0032-CP1	760	13,143
9948-P1-0033-CP1	903	13,143
9948-P1-0034-CP1	984	13,143
9948-P1-0035-CP1	988	13,143
9948-P1-0036-CP1	988	13,143
9948-P1-0037-CP1	1,060	13,143
Total	10,564	202,861

E.3.6.6. Remarks on difference from estimated value in included CPA

Means of verification	<p>As verified and evident from the Monitoring Report /13/ and corresponding ER calculations sheet /4/, the actual emission reductions achieved for Water Purification systems for the CPAs under this verification in the current monitoring period were found less than the estimated quantity in the CPA-DDs /2/ for the comparable period. This is largely due to lower number of water purifiers that were installed/distributed in the CPAs compared to that envisaged in the CPA-DDs/2/.</p> <p>Considering there is no increase in ERs, the verification team did not seek further justification. The quantitative details of actual values of achieved ERs for the CPA and value estimated in the CPA- DDs /2/ is presented in the above table.</p>
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Findings	No findings were raised
Conclusion	The actual emission reductions achieved in any of specific CPAs are not higher than the estimated quantity of ERs in the CPA-DDs /2/. Accordingly, it was accepted by the verification team.

E.3.7. Assessment of reported sustainable development co-benefits

Means of verification	The coordinating/managing entity did not identify and establish the monitoring of the sustainable development benefits of the revised accepted CDM PoA /1/ and no such document was developed and published on the UNFCCC CDM website /12/. Therefore, no assessment was required for the same.
Findings	No findings were raised.
Conclusion	The CME is not required to monitor the sustainable development benefits of the registered CDM PoA.

E.3.8. Global stakeholder consultation

Means of verification	The global stakeholder consultation was not found applicable because period under verification is 4 th monitoring period.
Findings	None.
Conclusion	The requirement is applicable for situations when global stakeholder consultation was carried out after the publication of first monitoring report. Therefore, this was not found applicable.

SECTION F. Internal quality control

The draft verification report that is prepared by verification team is reviewed by an independent technical review team (one or more members) 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 CDM 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 are independent of the verification team.

During the technical review process additional findings may be identified or the closed-out findings may be opened, which needs to be satisfactorily resolved before the request for issuance is submitted to UNFCCC. The independent technical reviewer may either approve the report as such or reject/return the same in such case providing the comments/findings/issues that need to be resolved by the verification team. The decision taken by the Technical Reviewer is final and is authorized on behalf of Earthood Services Private Limited.

SECTION G. Verification opinion

Earthood Services Private Limited (ESPL), contracted by Impact Carbon (the CME for the PoA), has performed the fourth independent verification of the emission reductions for the registered CDM PoA 9948 "Impact Carbon Global Safe Water Programme of Activities (PoA)" for the fourth monitoring period 01/01/2020 – 21/03/2020 (both days included) as reported in the Monitoring Report (public) Version 01 dated 15/09/2020 /13/. The CME is responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project activity.

ESPL confirms that the monitoring system is in place and the emission reductions are calculated without material misstatements. This verification report has been prepared using the latest available template /11/ specified by UNFCCC and complies with the instructions to follow of CDM VVS-PoA Version 2.0 /9/.

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 included CPAs confirm to the revised accepted PoA-DD as well as comply with applicable CDM rules and regulations and in accordance with applied monitoring methodologies, AMS III.AV (Version 04) /6/.

As a result, it is confirmed that the emission reductions from the CDM PoA 9948 "Impact Carbon Global Safe Water Programme of Activities (PoA)" are correctly reported in the Monitoring Report Version 3.0 dated 15/04/2021 and corresponding ER sheets for the monitoring period 01/01/2020 – 21/03/2020 (including both days) amount as 10,564 tCO₂e. Therefore, this will be submitted as part of request for issuance as per CDM PCP Version 2.0 /8/.

SECTION H. Certification statement

The verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. ESPL planned and performed the verification by obtaining evidence and other information and explanations that ESPL considered necessary to give reasonable assurance that reported GHG emission reductions are fairly stated.

In our opinion the GHG emissions reductions reported for the PoA for the monitoring period 01/01/2020 – 21/03/2020 (MP 04) are fairly stated in the Monitoring Report (final) Version 3.0 dated 15/04/2021.

ESPL, based on outcome of verification activities, certify in writing that, during the monitoring period 01/01/2020 – 21/03/2020 (including both days), the registered CDM PoA “Impact Carbon Global Safe Water Programme of Activities (PoA)” and the included CDM CPAs achieved the verified amount of **10,564 tCO_{2e}** reductions in anthropogenic emissions by sources of greenhouse gases that would not have occurred in the absence of the CPAs.

Appendix 1. Abbreviations

	Full texts
AMS	Approved Methodology for Small-scale
BE	Baseline Emission
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CH ₄	Methane
CL	Clarification Request
CME	Coordinating and Managing Entity
CO ₂	Carbon di oxide
CPA	Component Project Activity
CP	Crediting Period
DNA	Designated National Authority
DR	Desk Review
DOE	Designated Operational Entity
EB	Executive Board
ER	Emission Reduction
ESPL	Earthood Services Private Limited
FAR	Forward Action Request
GHG	Green House Gas
GSC/GSP	Global Stakeholder Consultation Process
GW	Giga Watt
GWh	Giga Watt hour
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
kW	kilo Watt
L/min	Litres per minute
LoA	Letter of Approval/Authorization
LSC	Local Stakeholder Consultation Process
MoC	Modalities of Communication
MoV	Means of Validation
MP	Monitoring Plan

MW	Mega Watt
MWh	Mega Watt hour
N ₂ O	Nitrous Oxide
PCP	Project Cycle Procedure
PE	Project Emission
PoA DD	Programme of Activities Design Document
PP	Project Participant
PRC	Post Registration Changes
PS	Project Standard
QA/QC	Quality Assurance/Quality Control
tCO ₂ e	tonnes of Carbon di Oxide equivalent
UID	Unique Identification
UNFCCC	United Nations Framework Convention on Climate Change
V	Version
VVS	Validation and Verification Standard
WPS	Water Purification Systems

Appendix 2. Competence of team members and technical reviewers

Competence Statement			
Name	Deepika Mahala		
Country	India		
Education	M. Sc. (Environmental Management), GGSIP University B.Sc. Hons. (Chemistry), Sri Venkateshwar College, DU		
Experience	3 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		
Local expert	YES (India)		
Financial Expert	NO		
Technical Reviewer	YES		
TA Expert	YES (TA 1.2 & TA 3.1)		
Reviewed by	Shreya Garg	Date	14/09/2018
Approved by	Anshika Gupta	Date	14/09/2018

Competence Statement	
Name	Virginia Njeri
Country	Kenya
Education	Diploma (Business Management)
Experience	7 Years
Field	Administration
Approved Roles	
Team Leader	No
Validator	No

Verifier	No		
Methodology Expert	No		
Local expert	Kenya		
Financial Expert	No		
Technical Reviewer	No		
TA Expert	No		
Reviewed by	Abhishek Mahawar	Date	01/03/2018
Approved by	Ashok Kumar Gautam	Date	01/03/2018

Competence Statement			
Name	Vaishali Vatsa		
Education	M.Sc. (Environmental Studies and Resource Management), TERI University		
Experience	4 months		
Field	Climate Change		
Approved Roles			
Team Leader	NO		
Validator	Yes		
Verifier	Yes		
Methodology Expert	NO		
Local expert	NO		
Financial Expert	NO		
Technical Reviewer	NO		
TA Expert (X.X)	NO		
Trainee	NO		
Reviewed by	Shreya Garg	Date	30/12/2019
Approved by	Anshika Gupta	Date	02/01/2020

Competence Statement	
Name	Ashok Gautam
Country	India
Education	M. Sc. (Environmental Sciences) M. Tech. (Energy & Environmental Management)
Experience	16 Years +
Field	Energy, Climate Change & Environment
Approved Roles	
Team Leader	YES
Validator	YES
Verifier	YES
Methodology Expert	AMS-I.D., AMS-I.A., AMS-I.C., AMS-I.E, AMS-II.D., AMS-II.G., AMS-III.E., AMS-III.H., AMS-III.Q, AMS-III.Z., AMS-III.AV., AM0029, AM0025, AM0056, ACM0001, ACM0002, ACM0004, ACM0012, ACM0006, AM0018, ACM0009, AM0034, AMS.I.B, ACM0003
Local expert	YES (India)
Financial Expert	YES
Technical Reviewer	YES
TA Expert	YES (TA 1.1, TA 1.2, TA 3.1, TA 13.1)

Reviewed by	Shreya Garg	Date	23/10/2019
Approved by	Anshika Gupta	Date	23/10/2019

Appendix 3. Documents reviewed or referenced

No.	Author	Title	References to the document	Provider
1	Impact Carbon	Registered PoA-DD Revised approved PoA-DD	Version 03, Dated:24/03/2014 Version 07, Dated: 18/04/2017	CME
2	Impact Carbon	Registered CPA-DD-04 Registered CPA-DD-23 Registered CPA-DD-24 Registered CPA-DD-25 Registered CPA-DD-26 Registered CPA-DD-27 Registered CPA-DD-28 Registered CPA-DD-29 Registered CPA-DD-30 Registered CPA-DD-31 Registered CPA-DD-32 Registered CPA-DD-33 Registered CPA-DD-34 Registered CPA-DD-35 Registered CPA-DD-36 Registered CPA-DD-37	Version 1.2, Dated: 08/05/2017 Version 4.0, Dated: 13/11/2018 Version 4.0, Dated: 13/11/2018 Version 4.0, Dated: 13/11/2018 Version 4.0, Dated: 13/11/2018 Version 4.0, Dated: 13/11/2018 Version 4.0, Dated: 13/11/2018 Version 4.0, Dated: 13/11/2018 Version 4.0, Dated: 13/11/2018 Version 4.0, Dated: 13/11/2018 Version 4.0, Dated: 13/11/2018 Version 4.0, Dated: 13/11/2018 Version 4.0, Dated: 13/11/2018 Version 4.0, Dated: 13/11/2018 Version 4.0, Dated: 13/11/2018 Version 4.0, Dated: 13/11/2018	Other
3	Carbon check India Pvt Ltd.	CPA Inclusion Report (9948-P1-0004-CP1, 9948-P1-0023-CP1 to 9948-P1-0037-CP1)	Version 3, Dated: 10/05/2017, Version 4, Dated: 15/11/2018	Other
4	Impact Carbon	ER sheet	Version 2.0; Dated 06/01/2021	CME
5	Impact Carbon	Sales Database	Dated 26/10/2020	CME
6	UNFCCC	Methodology: AMS III A.V.	Version 4	Others
7	UNFCCC	PS for PoA	Version 2	Others
8	UNFCCC	PCP for PoA	Version 2	Others
9	UNFCCC	VVS for PoA	Version 2	Others
10	UNFCCC	CDM-PoA-MR-Form	Version 3	Others
11	UNFCCC	CDM-PoA-VCR-Form	Version 3	Others
12	UNFCCC	PoA UN webpage	https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/5J36IFUKQVNMRA0OZPGLH9C7STED1W/viewCPAs?s=0	Others
13	Impact Carbon	Monitoring Report (Public) Monitoring Report (Final)	Version 1.0, Dated 15/09/2020 Version 3.0, Dated 15/04/2021	CME
14	Impact Carbon	Purchase Orders and delivery notes	Various	CME
15	Impact	Agreement between CME and	Dated: 15/01/2019	CME

	Carbon	CPA Implementer		
16	GACC	GACC Analysis report- Sector Mapping by GVEP International, 2012	-	CME
17	DHS	DHS Report, Kenya 2014	2014	CME
18	Impact Carbon	Monitoring Survey form + Water Quality Test	Multiple Dates: 03/08/2020 – 12/08/2020	CME
19	UNFCCC	Standards for Sampling and survey for CDM PoA	Version 8.0	Others
20	Impact Carbon	Training Records	20/05/2019 & 17/06/2019	CME
21	Impact Carbon	Delivery Notes	Multiple Dates	CME
22	IPCC	IPCC default values for fossil fuels	https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf	Other
23	Government of Nakuru	Biomass Fuel Market Study, County Government of Nakuru, 2016	Dated August 2016	CME
24	WHO	WHO Technical Notes on Drinking -Water sanitation and Hygiene	https://www.who.int/water_sanitation_health/emergencies/WHO_TN_10_Hygiene_promotion_in_emergencies.pdf?ua=1	CME
25	UNFCCC	AMS-I.E.	Version 5.0	Other
26	UNFCCC	UNFCCC SSC WG 37 th Meeting Report for Kenya	http://cdm.unfccc.int/Panels/ssc_wg/meetings/037/ssc_37_an14.pdf	CME
27	Impact Carbon	Photographs of unique identification numbers written on water purification systems	-	CME
28	Medentech (technology supplier for UltraFLO and UltraTAB) Rotex (technology supplier)	a. Technical specification confirming capacity / expiry of UltraFlo issued by Medentech b. Technical specification confirming capacity / expiry of UltraTAB issued by Medentech c. Photographs of UltraTAB strip and UltraTAB pack for the UltraTAB treatment capacity d. UltraFLO Installation Manual (specifying inlet port size, pressure rating etc.) e. UltraFLO dimension declaration by CME f. Photographs of UltraFlo cartridge and UltraTAB pack for the expiry of the UltraFlo and UltraTAB respectively g. Installation Logs for UltraFLO confirming piped applications. a. Multi-Barrier UV - Technical Specification from Supplier (Rotex) for	-	CME

	for Multi-Barrier UV)	UV systems confirming treatment capacity and other parameters (inlet port size, pressure rating, wattage etc.) b. Multi-Barrier UV - Lifespan confirmation from Supplier (Rotek) c. Photographs of Multi barrier UV systems d. Installation Logs for Multi-Barrier UV confirming piped applications.		
29	Impact Carbon	Evaluating household water treatment options: Health based targets and microbiological performance specifications" (WHO 2011)	https://www.who.int/water_sanitation_health/publications/2011/evaluating_water_treatment.pdf	CME
30	Impact Carbon	Aquagenx Testing Kit specifications Photos of Aquagenx test results	-	CME
31	UNFCCC	Guidelines for sampling and surveys for CDM project activities and programme of activities	Version 4.0	Other
32	UNFCCC	EB 67 Annex 22 https://cdm.unfccc.int/filestorage/H/2/9/H29X6EKQMJU7RY85DIT4ZPFAL3O1GW/eb67_rep_an22.pdf?t=ZIZ8cHgxcXQ1fDBaKlvFgRuMIYclRR3nH_se	11/05/2012	Other
33	Impact Carbon	Random number -excel sheet	-	CME
34	Impact Carbon	CME Mail conversation with buyers for delivery commitment	-	Other
35	Impact Carbon	ERPA	-	Other
36	Impact Carbon	Complaint Log (Samples)	-	Other
37	ESPL	Previous Verification report (MP2)	27/08/2019	Other
38	UNFCCC	EB68 - meeting report https://cdm.unfccc.int/filestorage/8/i/KYQVI5N0ABEJX3T68ZDF1M7RCGU9SW.pdf/eb68_report%20v01.1?t=QXZ8cWgz_bWZtfDB2p0F4x0TF7eAJLmYt1_yy	20/07/2012	Other
39	ESPL	QMS Manual	Version 3.5, Dated 21/10/2020	Others
40	ESPL	Previous Verification report MP3B4	Version 2.0, Dated 26/10/2020	Other
41	Latlong.net	Latlong.net URL: https://www.latlong.net/place/mombasa-kenya-4229.html	-	Others
42	ESPL	Skype call recordings of the	15/10/2020 & 16/10/2020	Others

		remote surveys		
43	Aquagenx	Aquagenx test module	-	CME
44	UNFCCC	CDM Website URL: https://cdm.unfccc.int/DNA/fNRB/index.html	-	
45	UNFCCC	SSC 543 https://cdm.unfccc.int/methodologies/SSCmethodologies/clarifications/03200	07/10/2011	Other
46	UNFCCC	EB 106 Meeting report	-	Other
47	UNFCCC	EB announcement https://cdm.unfccc.int/newsroom/latestnews/releases/2020/01041_index.html	23/06/2020	Other
48	New York times	https://www.nytimes.com/interactive/2020/world/asia/india-coronavirus-cases.html	-	Other
49	CME	Salesforce database	Multiple	Other
50	UNFCCC	Tool 05: Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation	Version 1.0	Other
51	Manufacturer of UV WPS	Technical Specifications of UV WPS	-	CME
52	NDTV	Status on Novel Coronavirus Cases in India URL: https://www.ndtv.com/india-news/coronavirus-live-updates-83-64-lakh-covid-19-recorded-in-cases-in-india-2321380	Dated 06/11/2020	Other
53	ESPL	OSV Exemption Request for UN 9948, MP-4, Batch-2.	Approved on Date: 07/10/2020	Other
54	UNFCCC	EB 108	-	Other
55	ESPL	PRC Validation report	Version 2.0, dated 20/04/2021	Others
56	CME	ER sheet for MP3	-	Other
57	Ministry of Education, Kenya	Academic school calendars	Calendar for 2020-2021 Calendar 2019-2020	CME
58	ESPL	Previous Verification report MP2B6	Version 3.0, Dated 21/09/2020	Other

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

Table 1. Remaining FARs from validation and/or previous verification

No FAR was raised during previous verification.

Table 2. CLs from this verification

CL ID	01	Section no.	E.3.4.2	Date : 07/10/2020
Description of CL				
1. In the ER Sheet, worksheet "ERs Summary", cell AI20 mentions the source of f_{NRB} for non-renewable biomass (firewood or charcoal) as 0.92, and cell AA19 mentions the source of this value being EB67,				

Annex 22, whereas in the MR (Page – 21), the parameter table mentions source of default f_{NRB} value as taken from UNFCCC SSC WG 37th Meeting Report for Kenya. PP is requested to clarify the inconsistency.

2. For f_{NRB} , it is mentioned in the MR that only the users' population for each fuel type shall be reassessed, and the weighted average values shall be used to calculate the updated f_{NRB} value. For the current monitoring period (4th) – 01/01/2020 to 21/03/2020, the reference for population weights is taken from a 2016 study. PP is requested to clarify on considering this data as recent and representative for the calculations pertaining to the monitoring period. Also, for EF same 2016 study has been used.
3. The evidence against CPA start date is provided for CPA-4, and a proforma invoice for CPA-26 to CPA-37. It is observed that the purchase order provided as evidence against CPA-4 is not clearly showing any dates. Also, there are no evidence shared for CPA-23, CPA-24 & CPA-25. PP is requested to provide evidence against the CPA start date for CPA-4, CPA-23, CPA-24, & CPA-25.

Project participant response	Date : 06/01/2021
<ol style="list-style-type: none"> 1. The parameter $f_{NRB,y}$ (fraction of non-renewable biomass), source of data i.e. "UNFCCC SSC WG 37th Meeting Report for Kenya" mentioned in the MR (Page-21) is an extension of "EB 67 annex 22, as per para 3 of UNFCCC CDM-SSC WG 37th Meeting Report Annex 14"²⁵. The SSCWG presented an information note giving default f_{NRB} values for various countries which was approved in EB67 as Annex 22 (refer EB meeting 67 meeting report, para 92). In EB 67, The EB further requested the secretariat, in consultation with the SSC WG, to continue to determine f_{NRB} factors for Parties with 10 or less registered CDM project activities as of 31 December 2010 and recommend to the Board default values for application in these countries (EB 67 meeting report, para 93). The SSC WG published another information note in SSC WG 37 (annex 14) providing default f_{NRB} value for Kenya which was subsequently approved in EB68 (refer EB68 meeting report, para 106). The source of data of parameter f_{NRB}, is rectified in MR and ER Sheet to be consistent with each other The revised MR and ER Sheet are being submitted. 2. The parameter $f_{NRB,y}$ is a monitoring parameter that is determined using "UNFCCC SSC WG 37th Meeting Report for Kenya, an extension of EB 67 annex 22" default values for f_{NRB} for LDCs and SIDS combined with survey, national, or regional data to determine the % of users using given fuel type (biomass / fossil fuels) as per the registered PoA-DD. The CME has used published data to determine the % of users using biomass/ fossil fuel. No more recent national data for schools in Kenya, providing information on % population using different fuel types, is available hence the use of the aforesaid report for determining the % of users using biomass/ fossil fuel is deemed appropriate. Please note that these types of studies are time taking and usually occur after 5 years or more. Lastly, please refer the registered CPA-DD which provisions for use of values established in previous monitoring period in case more recent data is not available. 3. The start date evidence of CPA 04 and CPA 23 to CPA 37 are being submitted. 	

Documentation provided by project participant	
PoA 9948 MP4 MR 2 Norway Kenya MR ver 2.0 06012021 PoA 9948 MP4 MR2 Norway Kenya ER Sheet ver 2.0_06012021 CPA 04 and CPA 23 to 37 Start Date Evidence (Sales Force Reports)	
DOE assessment	Date : 11/01/2021
<ol style="list-style-type: none"> 1. MR and ER sheet consistently mention the source as UNFCCC CDM-SSC WG 37th Meeting Report for Kenya (extension of EB 67 annex 22 as per para 3 of SSC WG 37 annex 14). The sources were checked and found to mention 0.92 as the default value of $f_{NRB,y}$ for Kenya which is used appropriately in the calculation of the final value of the parameter $f_{NRB,y}$. 2. From the review of the published data "Biomass Fuel Market Study, County Government of Nakuru 2016 it was confirmed that CME has used the most recent data available for the determination of % of users using biomass/ fossil fuel in calculating the f_{NRB} value. The CPA DD was checked to confirm the provision of using a value established in previous period in case a recent data is not available. 	

²⁵ https://cdm.unfccc.int/Panels/ssc_wg/meetings/037/ssc_37_an14.pdf

3. CME has now submitted the CPA start date evidence for each of the CPAs included in this verification. The date mentioned in the evidence was found to be consistent with the date mentioned in the revised MR version 2.0.
Thus, CL#01 stands closed.

CL ID	02	Section no.	E.3.4.2	Date : 07/10/2020
Description of CL				
There is inconsistent information between the supporting document P.O. (Purchase Order) for several institutions surveyed and the information available in the ER Sheet worksheet "Sales Database". In some cases, the population of total number of users is inconsistent between P.O. and Sales Database (i.e. there's a significant drop in terms of number of users in the institution). The CME shall justify the reason for the difference.				
Project participant response				Date : 26/10/2020
The parameter $N_{y,i}$ (the average population serviced by water purification systems) is a monitoring parameter. Initially, the parameter value gets recorded at the time of installation / distribution of the water purification system in sales receipt (PO / delivery note). As per the CPA monitoring plan, " <i>the number of people in the institution will be updated (at least biennially) to reflect change in the institution size over time</i> ". Therefore, the CME updates the boarding / non-boarding student / staff count in the project institutions and records in CME's database management software (Sales Force).				
As an objective evidence, the Sales Force report of each monitored sample, confirming the updated boarding / non-boarding student / staff count in the institution has already been submitted and is consistent with the end users given in the sales database.				
Documentation provided by project participant				
NA				
DOE assessment				Date : 11/01/2021
Monitoring parameter $N_{y,i}$ (the average population serviced by water purification systems) gets recorded at the time of installation/ distribution of the WPS. The population at the institution gets updated over time in order to reflect the change in the institution size and records the updated population in the CME's database management software (Sales Force) which was found to be in-line with the CPA-monitoring plan stated under section B.5. 1.. Thus, it was confirmed that the PO has the population recorded at the time of installation of the WPS which gets updated overtime and reflected in the sales database.				
The sales force report provided by the CME for each of the sampled end-users confirmed that the number of boarding / non-boarding student / staff count in the institution mentioned was found to be consistent with the population mentioned in the sales database.				
Thus, CL#02 stands closed.				

CL ID	03	Section No.	E.3.4.2.	Date: 07/10/2020
Description of CL				
The CPA-DDs indicate the monitoring frequency for the parameter "operational units" as "At least once per verification or biennially as per the monitoring requirements in the methodology". The applied methodology (AMS-III.AV. ver. 04, paragraph 15) requires "at least once every two years (biennial)". The DOE shall provide further information how it verified that the monitoring plan complies with the applied methodology.				
CME response				Date: 06/01/2021
As per the applied methodology AMS-III.AV version 04.0 " <i>Monitoring shall consist of checking of all appliances or a representative sample thereof, at least once every two years (biennial) to ensure that they are still operating or are replaced by an equivalent in service appliance as per the relevant sampling requirements of AMS-I.E</i> ".				
The monitoring frequency of "at least once every two years", is deemed the maximum duration over which the parameter must be monitored at least once.				
The term "per verification", on the other hand is provisioned to cover cases when the verification is being conducted for a monitoring period which is less than two years. For example, refer the following:				
MP#	Duration	Start date of Monitoring	Justification	

2	23 May 2017 – 22 May 2019	20-05-2019	--
3	23 May 2019 – 31 Dec 2019	07-01-2020	MP3 monitoring was conducted in less than 2 years since MP2 (MP3 monitoring done again in Jan 2020 despite MP2 monitoring done in May 2019)
4	01 Jan 2020 – 21 Mar 2020	03-08-2020	MP4 monitoring was conducted in less than 2 years since MP3 (MP4 monitoring done again in Aug 2020 despite MP3 monitoring done in Jan 2020).

This approach avoids application of values established in previous monitoring period (in above example, values determined in MP3), to the current monitoring period (MP4) without monitoring the parameter (because the monitoring frequency is once every two years). Thus, the monitoring frequency of “at least once per verification” applicable to shortened MPs results in yielding more representative and accurate results of monitoring parameter rather than applying the values established in the previous monitoring period.

Further, the “biennial” monitoring frequency supersedes “per verification” and not the other way around. Thus, in case of a verification covering more than 2-year monitoring period, the PP shall need more than a singular monitoring event to ensure “at least biennial” monitoring frequency is met.

Lastly, the monitoring period under concern as shown in table above still remains within the “biennial” monitoring frequency.

Thus, the monitoring plan and the concerned monitoring report is compliant with the monitoring methodology.

Documentation provided by the CME

N/A

DOE assessment

Date: 11/01/2021

The applied methodology AMS-III.A.V. version 4.0 prescribes the parameter to be monitored at least once every two years (biennial) to ensure that they are still operating or are replaced by an equivalent in service appliance.

The word ‘at least’ in the required frequency at least biennial does not refrain the CME to conduct the monitoring with a better frequency and a higher frequency (i.e. more than once in two years) is still in line with the requirement.

The CPA-DDs stating the monitoring frequency for the parameter "operational units" as "At least once per verification or biennially as per the monitoring requirements in the methodology" is still in line with the applied methodology AMS-III.A.V. version 4.0.

The CME has demonstrated in the table above that the parameter is monitored at a frequency higher than the minimum required frequency. The results from the sampling surveys conducted for every verification are deemed more accurate than following at-least biennial monitoring frequency. Thus, the approach was found to be in line with the applied methodology and was accepted by the verification team.

Thus, CL#03 finding stands closed.

Finding reopened

UN issue#04

For the parameter operational units, the monitoring frequency is indicated as continuous in some CPAs and others as At least once per verification or biennially; and Once per verification in the monitoring report and the verification report. However, the applied methodology (AMS-III.A.V. ver. 04, paragraph 15) requires the monitoring frequency as at least once every two years (biennial). The CME shall explain how it verified that the monitoring plan complies with the applied methodology.

Project participant response

Date : 15/04/2021

CME would like to clarify that the term “at least” is deemed binding to both “once per verification” as well as “biennially as per the monitoring requirements in the methodology” and not to “once per verification” alone. Thus, under no circumstances, the monitoring frequency will extend beyond two years and shall remain

compliant with the monitoring methodology requirement always. Further, please refer the PoA validation report, CAR 07, page 80 of 106 which states the following:

The PP revised the monitoring frequency to be “At least once per verification or biennially as per the monitoring requirements in the methodology” to ensure that the methodological requirements are met (at least biennial) and that each verification is based on relevant monitoring results.

Thus, this substantiates that “at least once per verification” was provisioned in the PoA-DD to prohibit the CME apply the value established in a given MP to the following MP (without monitoring it again) for cases where the combined length of two consecutive MPs is less than two years.

Please refer all previous monitoring periods for different batches where dedicated monitoring for each monitoring period has been conducted despite them being even less than one year duration. For example, the monitoring in MP3 was conducted in Jan-Feb 2020 and the monitoring in MP4 was conducted in Aug 2020 whereas combined duration of these two monitoring periods is less than one year.

Also, for the first monitoring period, although the monitoring period was longer than 2 years (30/05/2014 – 22/05/2017) and was covered under single verification, the CME did not claim any ERs for the period 30/05/2014 – 21/05/2015 and followed the “at least biennially” monitoring frequency to ensure that methodology prevails over such cases.

Hence, the CME affirms that in no case the methodology requirements with respect to monitoring frequency would be compromised.

Documentation provided by project participant

N/A

DOE assessment

Date: 19/04/2021

The applied methodology AMS-III.AV. version 4.0, para 15, states that “Monitoring shall consist of checking of all appliances or a representative sample thereof, at least once every two years (biennial) to ensure that they are still operating or are replaced by an equivalent in service appliance”.

The CPA DDs mention under section B.5.1., that for the parameter ‘Operational Units’, the frequency is ‘at least once per verification or biennially as per the monitoring requirements in the methodology’. Thus, for current issuance request, the frequency required by the applied methodology has been met.

As explained by CME and confirmed by the verification team, in the all the previous monitored periods, the monitoring frequency followed is found to be adhering to the methodology requirements.

Further, the verification also assessed the PoA validation report CAR 07, page 80 of 106 which confirms that “at least once per verification” is superseded by “biennial” and the methodology requirements prevails. Based on above, the monitoring frequency stated in the monitoring plan is deemed in compliance with the monitoring methodology.

However, to ensure that under no circumstances, the methodology requirement is compromised in future,

FAR#01 has been raised to ensure that monitoring frequency of parameter “operational units”, shall be at least biennial in line with monitoring methodology requirements.

Thus, the CAR is closed.

CL ID	04	Section No.	E.3.4.2.	Date:	07/10/2020
Description of CL					
The registered CPA-DDs requires that the water quality will be tested as per paragraph 2(b) of AMS III.AV ver. 4 (i.e. Laboratory test report and/or official notifications (e.g. from national authority on health)). However, the monitoring report shows that Aquagenx testing kits were used to determine the water quality. The DOE shall elaborate how it verified compliance of monitoring with the registered monitoring plan in the included CPA-DDs.					
CME response					Date:
The CPA-DD (CPA23 for instance) on page 3 states the following:					06/01/2021

“The application of technologies distributed under the CPA achieve compliance with “Interim or higher” performance target as per “Evaluating household water treatment options: Health based targets and microbiological performance specifications” (WHO 2011) or a comparable national standard or guideline, per the methodology AMS-III.AV Version 4. All technologies that are going to be distributed under this CPA, will be lab tested to ensure they adhere to these guidelines.”

This has also been made an eligibility criterion (# 7, page 33 of CPA-DD) for inclusion of a technology in the CPA which states the following:

Eligibility criterion - Required condition	Supporting evidence for inclusion	Description of this CPA in relation to the criterion and supporting evidence
The water purification technology/equipment must achieve compliance with either: a) A relevant national standard or b) The interim performance targets as per “Evaluating household water treatment options: Health based targets and microbiological performance specifications” (WHO, 2011)	Verifiable evidence: – Laboratory test report and/or official notifications (e.g. from national authority on health). – Technical specifications document(s)	The water purification technology/equipment are in compliance with the following: (b) The interim performance targets as per “Evaluating household water treatment options: Health based targets and microbiological performance specifications” (WHO, 2011) Supporting Evidence: – Technical specifications document(s)

Thus, the project technology (Ultra TAB, Ultra Flow and Multibarrier UV) needs to demonstrate that they comply with WHO, 2011 interim performance targets as per aforesaid.

This has already been confirmed via the technical specifications listed in CPA-DD wherein Log 2 reduction is achieved by Chlorination systems (as mentioned in CPA 23 CPA-DD on page 3) and Log 4 reduction is achieved by Ultraviolet disinfection systems (as mentioned in CPA 04 CPA-DD on page 3). Thus, the technology’s compliance with interim measures has already been demonstrated.

For ex-post water quality monitoring, the CPA-DD refers to the following:

“As per the World Health Organizations Guidelines²⁶ it is more cost-effective and feasible to monitor indicator organisms such as E.coli. Monitoring of proxies such as E. Coli, faecal coliform counts, chlorine levels may be used to assess water quality. CPA implementer shall be responsible for conducting testing. Enumerators will be trained on proper testing procedures and the appropriate testing technology will be used. CPA implementer shall be responsible for conducting testing”.

The CME has used Aquagenx Compartment Based Test (CBT) E.Coli / Total Coliform (ECTC) testing kits to monitor E.Coli as the indicator organism to test the quality of water. Aquagenx CBT ECTC testing Kits are used extensively across the globe in low resource areas. The Aquagenx Test is very effective testing method in terms of flexibility wrt transportation, for cases involving institutional and community engagement. The test kits detect and quantify E.Coli in 100 mL samples.

The water quality assessment using Aquagenx CBT ECTC testing kit follows a standard testing procedure. Each kit includes a sample collection Whirl-Pak Thio-bag and a powder growth medium pack. The powder growth medium has a glucose substrate called X-Gluc. When E. coli metabolize this substrate in Aquagenx’s growth medium, the color of the water turns blue, indicating the presence of E. coli.

The Aquagenx CBT ECTC is a laboratory-based test with provisions for sample collection in the field directly. Given the project systems are installed in institutions, thus, the water quality sample collection can only be done in the field. The portable water sample collection bags provisioned in Aquagenx CBT ECTC testing kit, renders it as a preferred and viable option for testing water quality for project devices installed in institutions and schools under the PoA.

The following standard sample collection procedure is followed:

²⁶ WHO 'Guidelines for Drinking-water Quality, Fourth Edition Page 41.

1. At the time of sample collection in the field - the Whirl-Pak Thio-bag is labeled with the name of the institution, date and time of sample collection and the unique SF ID for that institution.
2. After labelling the bag, it is filled with 100 ml of water from the project system being monitored.
3. The powder growth medium is added to the Whirl-Pak Thio bag. The Whirl-Pak seal is rolled down and the Thio-bag is closed shut. This ensures that the sample collections remain free from any external contamination.
4. The powder medium is dissolved by gently swirling the bag.

The sealed Thio bag is then incubated in the in-house lab in the Impact Water's office. The incubation is an ambient temperature incubation for 48 hours. The incubation for 48 hours ensures that even the trace presence of E.Coli gets detected in the water sample collected. The bags are incubated in controlled environment in the lab to prevent contamination and health hazard in the Impact Water's office.

After the incubation of 48 hours the results of the water quality test are read by the qualified lab technician. A blue/green color indicates presence of E.Coli in water sample. After the test is completed, chlorine tablets are added in the Thio bag and stranded for 30 minutes to ensure decontamination. The decontaminated water sample is then discharged in the in-house lab itself.

Thus, the water sample collection and testing have been conducted by trained staff with extensive prior experience of water quality testing using Aquagenx CBT ECTC testing kits. The same was cross verified by the Verification Team via interviews with the water quality testing staff wrt testing protocol, process of sample collection, testing procedure followed, test results assessment etc. The Verification Team also reviewed photographic evidence of water quality samples and test results to confirm the accuracy to results reported by the CME.

For details, refer the testing protocol is available at the following link:

<https://www.aquagenx.com/wp-content/uploads/2020/05/PA-CBT-ECTC-Instructions-DrinkingWater-May2020.pdf>

The use of Aquagenx CBT ECTC testing kit for determining water quality is therefore in line with the registered CPA-DDs as well as monitoring methodology. The tests have been conducted by trained staff with extensive prior experience of water quality testing.

Further, various studies conducted across many locations and environments around the world by academic institutions, national government agencies, international NGOs and United Nations agencies confirm that, the Aquagenx test a Compartment Bag Test (CBT) gives results comparable with more complicated, expensive and less portable tests conducted otherwise.

A paper published in "The American Journal of Tropical Medicine and Hygiene, Volume 96, Issue 4, 5 Apr 2017, p. 970 – 975²⁷ states that:

....., and one sample using membrane filtration (MF) was analyzed by reference laboratories. There were no statistically significant differences in E. coli concentrations between the field and laboratory CBT results, or when compared with MF results. These results suggest that the CBT for E. coli is an effective method to quantify fecal bacteria in household drinking water. The CBT can be incorporated into DHS and other national household surveys as a direct measure of drinking water safety based on microbial quality to better document access to safe drinking water.

Thus, the testing technology deployed by the CME/CPAI is deemed accurate, credible and reliable.

Documentation provided by the CME

N/A

DOE assessment

Date: 11/01/2021

²⁷ <http://www.ajtmh.org/content/journals/10.4269/ajtmh.15-0717>

The applied methodology requires the water quality to be monitored following para 2(b) of the applied methodology.

As per paragraph 2(b) of the applied methodology:

"It shall be demonstrated based on laboratory testing or official notifications (for example notifications from the national authority on health) that the application of the project technology/equipment achieves compliance either with: (i) at a minimum the performance target as per "Evaluating household water treatment options: Health based targets and microbiological performance specifications" (WHO, 2011); or (ii) an applicable national standard or guideline"

As responded by CME above, they have used Aquagenx Compartment Based Test (CBT) E.Coli / Total Coliform (ECTC) testing kits to monitor E.Coli as the indicator organism to test the quality of water. The CME has also explained clearly that the test with its protocol (<https://www.aquagenx.com/wp-content/uploads/2020/05/PA-CBT-ECTC-Instructions-DrinkingWater-May2020.pdf>) qualifies as laboratory test and meets the compliance required by applied methodology.

The monitoring team was also interviewed during the remote audit, during which they confirmed the entire process they follow for collecting each sample, handling the sample, reading results etc. and also confirmed that they have received training before conducting the test.

Thus, the results from the Aquagenx tests conducted by the monitoring team were found to be reliable and meeting the conditions of the applied methodology.

Thus CL#04 stands closed.

CL ID	05	Section No.	E.3.4.2	Date:	07/10/2020
Description of CL					
The CME/DOE shall provide further information on how it has crosschecked the operation of the project activity and continuous availability of safe drinking water as per paragraph 304 (c) of VVS for PoA, considering that the monitoring method was based on survey questionnaire alone (e.g. the question "When was the last time, a supply of cartridges/tablets were received?") and no information is provided regarding the crosschecking of the monitored data against other sources such as quantity of chlorine/No. of cartridges used during this monitoring period.					
CME response					Date: 06/01/2021
<p>Firstly, the monitoring methodology para 15 states:</p> <p>"Monitoring shall consist of checking of all appliances or a representative sample thereof, at least once every two years (biennial) to ensure that they are still operating or are replaced by an equivalent in service appliance as per the relevant sampling requirements of AMS-I.E".</p> <p>Para 16(b) of the methodology states:</p> <p>"The quantity of purified water in year y shall be derived from the capacity of the equipment established by manufacturers' specifications and the number of functional project appliances as per paragraph 15"</p> <p>Thus, the continuity of service (continuous availability of safe drinking water) is to be determined via ex-post sampling and if the project device is found functional during ex-post monitoring, the continuity of service is deemed being maintained over the entire monitoring period.</p> <p>However, during the ex-post monitoring, the CME has taken additional measures to ensure continuous availability of safe drinking water as follows:</p> <p>The monitoring survey form consists of the following questions:</p> <p>Question pertains to continuity/Maintenance:</p> <ul style="list-style-type: none"> Has routine supply/maintenance been conducted for the IW System? (Yes/No). When was the last time supply/maintenance was conducted? (DD-MMM-YYYY). <p>Question pertains to usage:</p>					

- Is the IW unit being used for water treatment? (Yes/No)
- Presence of other water treatment technologies / devices in the institution

The question pertaining to continuity /maintenance is intended to ensure that the user is receiving regular supplies / maintenance which ensures system's continuity. The date of last supply / maintenance serve as an objective evidence to cross-verify regular supplies/ maintenance being received by the user at the time of survey.

Further the date of last supply / maintenance provides the surveyor an option to check if last delivery has reached the user and have been put in use. This is achieved by physically cross verifying the product ID mentioned in the last delivery note / installation log with the system found installed on site (TAB packs available in case of UltraTAB and cartridge installed in case of UltraFLO and UV). This also confirms that earlier supplies have been consumed, ensuring continuous availability of safe drinking water.

The questions related to usage confirms that the system is function as per para 16. Additionally, none of the monitored schools were found using any other form of water treatment technology / device. This further substantiates imperative use of project devices, given drinking water is a basic sustenance need, and continuity of use.

In addition to aforesaid the CME has the following system to ensure continuous availability of the safe drinking water in the institutions:

- At the time of installation/distribution of the water purification systems (WPS) in the institution, the CME train the institution staff on usage of the WPS to ensure that the project devices are put to use and any apprehension regarding their quality and safety is resolved.
- The CME Call Center in the country offices, regularly follow ups with the institution regarding operational status of the project system of their installed WPS as well as the expected date of next supply. The schools are supplied with reinforcements in time to ensure system's continuity.
- Additionally, the CME country office contact detail is available in the system Purchase Order and Delivery Notes available with institution and also pasted on the system tank or school wall in form of sticker. The institution can anytime call the CME office for the subsequent supply of the UltraTab pack or UltraFlo/UV cartridge if needed, or as and when required. It has been verified by the DoE during remote assessment that schools are aware of the phone number to contact in case of needing maintenance / supplies.
- Lastly, the subsequent supply of the UltraTab packs and UltraFlo/UV cartridges in the institution is recorded in the CME database management software (SalesForce). The information on each supply made during the monitoring period (product quantity and serial number) has been provided for each school as well as for each supply (refer ER calculator, worksheet "Sales database" column Q: AB). The details of these supplies have also been cross verified against the delivery notes / installation records available at the CPAI office, by the DoE during remote assessment. Also, the DOE has cross verified the product ID reported in the last supply with the product ID found mentioned on the physical systems on site for sampled schools.

The above sales and monitoring provisions ensure as interrupted supply of safe drinking water in the institution.

Documentation provided by the CME

N/A

DOE assessment

Date: 11/01/2021

The continuous availability of safe drinking water is ensured by confirming the operational status of sampled systems and checking the provisions put in place by the CME other than the survey questionnaire.

During the survey, the CME checks that continuous supply of cartridge/tablets, through the questions stated above as 'Question pertaining to continuity/Maintenance' and also checks the operational status through 'Question pertaining to usage' stated above.

The questions pertaining to continuity/maintenance ensures that the institution is receiving continuous supplies and questions pertaining to usage confirms that those supplies are being used. Any institution reporting the product as being functional, cannot be out of supplies.

All the institution heads of “DOE sampled systems” were interviewed by the verification team to confirm that the product installed in the school was currently in operational condition and they have been receiving continuous supply of cartridge/tablets thus, getting continuous supply of safe drinking water.

Additionally, the DOE checked the provisions in place to ensure continuous supply of safe drinking water

- The institution head confirmed during the interview that staff from the institution have received adequate training on the usage of the installed WPS. They can detect if they are running out of supplies(cartridge/tablets) and accordingly contact the CME/CPAI for subsequent supplies to ensure continuous availability.
- The CME representatives interviewed during the remote audit confirmed that they have a Call Centre in the country offices which regularly takes follow up calls with the institutions regarding usage and headcount to gauge the expected date of next supply.
- The copies of Purchase Order and Delivery Notes and the presence of customer care number/email for supply / repair on the system's tank or school wall in form of sticker were checked to confirm that the CME country office contact detail is available to the institution staff and they can contact the CME in case they find any problem with the product or need additional tablets / cartridges. Moreover, during the remote survey calls, the institution heads confirmed to the verification team that they are aware about the contact number to which they can register their complain regarding the product or their request for supplies.
- The CME provided a detailed sales database which records the subsequent supplies with their product IDs for each institution, which is presented in the ER sheet (refer ER calculator, worksheet “Sales database” column R:AA). The CME has provided scanned copies of delivery notes available at the CPAI office to the verification team for cross verification of the subsequent supplies made to an institution. The verification team had checked it for the sampled institutions. The evidence reviewed confirmed the quantities of supplies mentioned in the ER sheet.

Thus, the verification team confirms that all the institutions (with systems claiming emission reductions) have received continuous supply and provide continuous safe drinking water during the monitoring period.

Thus, CL#05 stands closed

CL ID	06	Section No.	E.3.4.2.	Date: 07/10/2020
Description of CL				
The CME shall provide information how it considered application of 365 days as appropriate for the calculation of the total quantity of water purified during the year y, considering that the CPA-DDs indicate that the quantity of purified water is based on the “average population serviced/system” while the systems do not service the population during periods when population (i.e. the students) are on holidays and the CPA-DD for 9948-P1-0004-CP1 provide 262.1 days/year considering the school calendar.				
CME response				Date: 06/01/2021
The CPAs supply safe drinking water to institutions (day schools, boarding schools, prisons etc.). The application of 365 days of operation for the project units is justified on the basis of the following:				
I. The number of days of operation is mentioned as 365 days in the registered PoA-DD (refer equation 1.a. on page 70 of the registered PoA-DD). Similarly, the CPA-DDs also mention 365 days of operation in the ER calculation formulae.				
II. Besides, the number of days of operation is neither an ex-ante parameter nor an ex-post monitoring parameter as per the monitoring methodology or the registered monitoring plan in the PoA-DD.				
III. The application of 365 days of operation per year for project units is also corroborated by the				

subsequent versions of the methodology (refer para 17 of AMS-III AV. Version 08.0).

- IV. Last but not the least, the applied methodology (AMS III.AV version 4.0) caps the volume of drinking water per person per day at 5.5L/capita/day. The PoA has applied a much more conservative cap of 2L/person/day (for day school) and 3.5L/person/day (for boarding schools /prison). These limits are already attributed to minimum survival levels advocated by WHO (Minimum water quantity needed for domestic uses, Technical Note No. 9, WHO/SEARO Technical Notes for Emergencies). Table 1 of the referred document mentions that minimum survival allocation for domestic use (i.e. full day service deemed equivalent to boarding schools and prisons) as 7 l/capita/day (sustainable only for few days), out of which 3-4 ltr is attributed solely for drinking. For schools, it specifies 2 ltr per student per day as the minimum requirement. Also, Water, Sanitation and Hygiene Standards for Schools in Low-cost Settings, published by WHO specified a basic water requirement of 5 l/per/day for day / non-residential schools and 20 ltr/per/day for boarding schools (Page 18, Water, Sanitation and Hygiene Standards for Schools in Low-cost Settings, Indicators for Guidelines). Thus, a consideration of 2 ltr/per/day for day schools and 3.5 ltrs/per/day for boarding schools/prisons is already referring to minimum survival levels and is overly conservative and deemed applicable to entire year.
- V. Lastly, the weighted average value of $R_{y,i} = 2.16$ which is much less than a default value of 3 ltrs per person per day given by AMS III.AV. version 8.0 that is also at 365 days of crediting.

The aforesaid approach has been discussed (via a clarification request from CDM EB) and approved by CDM-EB during PRC-9948-003. Please refer document DOE clarification 8 – “FVR 599 CPA 5 to 13 PRC VR Nigeria 25.03.19 clean”, page 20 of 26, CAR 01 dated 21/01/2019 and DOE clarification 8 – “FVR 599 CPA 16 to 22 PRC VR Uganda 25.03.19 clean”, page 20 of 26, CAR 01 dated 21/01/2019 (<https://cdm.unfccc.int/PRCContainer/DB/prcp52130222/view>)

The CPA-DD for CPA 4 refers to 262.1 days per year for crediting, hence the ERs for CPA4 have been revised conservatively to calculate emission reductions for 262.1 days in year instead of 365 days. Please refer revised ER calculator (Refer Worksheet, “ERs summary”, cell E6, where Number of days of crediting has been multiplied with a fraction of 262.1/365 to ensure that ERs equivalent to the service level mentioned in CPA-DD is being accounted. However, as for CPA 9948-P1-0004-CP1, no baseline emissions are being claimed for the monitoring period, hence no adjustment to ERs is required.

Documentation provided by the CME

N/A

DOE assessment

Date: 11/01/2021

The application of 365 days as the number of days of operation for the project units, was found to be acceptable because of following justifications provided.

- I. Both PoA-DD and the CPA-DDs mention 365 days as the number of days of operation as verified from page 70 of PoA-DD and ER formulae of the CPA-DDs.
- II. Again, days of operation, was neither found to be an ex-ante parameter nor to be an ex-post monitoring parameter as verified from the registered monitoring plan.
- III. The applied methodology (AMS-III AV. Version 04.0) and subsequent versions of the applied methodology (AMS-III AV. Version 08.0) were reviewed and it was confirmed that value of 365 days for the days of operation has been applied in the applicable formulae and sample calculation shown in the methodology.
- IV. The capped volume of drinking water per person per day of 2L/person/day (for day school) and 3.5L/person/day (in boarding school) in the PoA was found to be conservative as these values were found to be meeting the minimum survival levels set by WHO. As per Technical Notes for emergencies by WHO, the minimum survival capacity has been allocated as 7 l/capita/day (sustainable only for few days), out of which 3-4 ltr is attributed solely for drinking. For schools, it specifies 2 ltr per student per day as the minimum requirement. Also, minimum requirement for day schools were found to be 5l/person/day and 20l/person/day as verified from water sanitation and Hygiene standards for Schools in Low-cost settings by WHO. Thus, following the above, the CME's

approach of considering 2 ltr/per/day for day schools and 3.5 ltrs/per/day for boarding schools/prisons were found to be conservative and deemed acceptable. This, approach has already been discussed and approved by CDM-EB as verified from DOE clarification 8 "FVR 599 CPA 5 to 13 PRC VR Nigeria 25.03.19 clean"

Hence, application of 365 days of crediting for a system is deemed appropriate and in line with applied methodology and registered PoA/CPA-DD.

For CPA-4 CME has now considered 262.1 days per year for crediting and has accounted the same in calculating the emission reduction for the concerned CPA. It was verified from the ER summary sheet that CME while calculating the emission reduction for CPA-4 has multiplied the number of crediting days with a fraction of 262.1/365 which ensured that ERs have been considered as per the service level mentioned in the registered CPA-DD. For CPA-4 it was also observed that no baseline emissions were being claimed during the current MP as no monitoring data was available. Thus, adjustment of ERs due to the revision in the crediting period days was not required.

Thus, the CL#06 stands closed.

CL reopened

UN issue#02

The CME shall provide information on how it is appropriate to apply the entire days covered by the monitoring period when calculating parameter QPW_y (i.e. quantity of purified water for drinking during the year y), given the facts that the systems do not service the population (i.e. the students) during the school holidays.

Project participant response

Date : 15/04/2021

The number of school days in ERs Summary tab(refer row 6), has been adjusted to correspond to only operational school days instead of complete duration of the monitoring period.

As a conservative measure, now the school academic calendar, as issued by the Ministry of Education, Kenya has been used to determine the total available operational school days within the monitoring period weighted for non-boarding and boarding population for each school.

Subsequently, the CME has considered weekdays (excluding weekends, public holidays, mid-term and end term holidays) for non-boarding users and considered days (including weekends and public holidays but excluding mid-term and end term holidays) for boarding users (as boarding students/staff will consume water during weekends and short public holidays) for determining the school days for which WPS should be credited. Please refer column AV:BC in "MP4 Sales Database" tab of ER Calculator where the school calendar for the monitoring period, school holidays list and start date and end date of school term have been presented.

The QPW_y value (row 8: ERs Summary tab), has been calculated accordingly considering credited school days in the monitoring period (row 6: ERs Summary tab)

This results in reduction of emission reduction to 10,564 tCO₂e from 16,193 earlier.

Documentation provided by project participant

PoA 9948 MP4 MR2 Norway Kenya MR ver 3.0 15042021

PoA 9948 MP4 MR2 Norway Kenya ER Sheet ver 3.0_15042021

DOE assessment

Date: 19/04/2021

In the applied methodology / registered PoA-DD/CPA-DDs, CPAs do not have provision to account for school holidays. However, based on the UN request for review question and rationale behind the same, the CME has revised the ER calculations to account ERs only for operational school days (refer tab: MP4 Sales Database) instead of the monitoring period days, on the basis of published and objectively verifiable government data (Academic school calendar).

The school term duration and corresponding term holidays are found to be correctly calculated as per the

submitted academic school calendars for the period 2019-2020 and 2020-21 issued by Ministry of Education, Kenya. Further, the CME's approach of considering only weekdays and excluding all weekend days, holidays, mid-term / end term breaks for non-boarding schools is deemed appropriate. Also, the approach for boarding schools to include weekdays, weekends and short holidays but excluding mid-term, end-term breaks is deemed appropriate as boarding staff and students will be serviced by the WPS systems occur during weekends and short holidays.

The calculation approach/rationale of calculating operational school days has been discussed in CL#07 below and is found appropriate, accurate and conservative. The revised achieved emission reductions in the current monitoring period have reduced since the last submission request, due to revised approach.

Moreover, FAR#02 has been raised to ensure that QPW_y is based on operational school days (discounting holidays), in future verifications.

Thus, the CL is closed.

CL ID	07	Section no.	E.2.1. and E.3.1.	Date : 18/03/2021
Description of CL				
UN issue#03				
The registered PoA-DD and the included CPAs mention that the sales database will include information on the address and contact details (name and phone number if available) of the end user. However, no information is provided on the name of the user (institution) where the water purification systems have been implemented. The CME shall explain how the implementation and operation of the registered CDM PoA and the included CPAs in accordance with the description contained in the registered PoA-DD and included CPA-DDs.				
Project participant response				Date : 15/04/2021
CME has submitted a master database having the information related to the End user (institution) where the WPS have been implemented. The same was reviewed by the verification team as well as cross verified during the remote assessment. However due to privacy concerns, this information has not been submitted to CDM Executive Board. Thus, the PoA and the CPAs have been implemented in accordance with the description contained in the registered PoA-DD and included CPA-DDs				
Documentation provided by project participant				
PoA 9948 MP4 MR2 Norway Kenya Master Database ver 1.0_06012021				
DOE assessment				Date: 19/04/2021
The Sales database in the ER sheet provided, was cross-checked with the master Sales database including institution details. The school SF ID, address and product ID were confirmed to be correctly stated in the Sales database worksheet in ER Calculator. Further, the institutional details were then verified with the purchase order form for the sampled schools interviewed by the verification team during the remote survey and were found to be correct. Thus, the verification team confirms that the PoA and the CPAs have been implemented in accordance with the description contained in the registered PoA-DD and included CPA-DDs.				
Thus, the CL stands closed.				

Table 3. CARs from this verification

CAR ID	01	Section no.	E.3.4.2.	Date : 07/10/2020
Description of CAR				
1. For parameter Ty,i, the number of Multi UV systems is not mentioned in the MR.				
2. In the reliability check during sample size calculation (refer ER Sheet worksheet "Sample Size Calculation" cells D26, D47, & D68), the CME has compared margin of error obtained with the z-value (cell B7). PP is requested to revise the cells D26, D47, and D68 accordingly.				
Project participant response				Date : 06/01/2021

1. The total number of multi-barrier UV systems distributed ($T_{y,i}$) is mentioned under "Value(s) of monitored parameter" of monitoring parameter $T_{y,i}$ in section E.2 of the revised MR.
2. The formula used for reliability check given in worksheet "Sample size calculation" cell D26, D47 and D68 have been rectified.

The revised ER Sheet and MR are being submitted.

Documentation provided by project participant

PoA 9948 MP4 MR 2 Norway Kenya MR ver 2.0 06012021

PoA 9948 MP4 MR2 Norway Kenya ER Sheet ver 2.0_06012021

DOE assessment

Date : 11/01/2021

1. CME has updated the total number of multi-barrier UV systems distributed ($T_{y,i}$) under section E.2 of the revised MR (Version 2.0) dated: 06/01/2021.

2. CME has now rectified the formula used for reliability check given in worksheet "Sample size calculation" cell D26, D47 and D68.

Thus, CAR#01 stands closed.

CAR ID	02	Section No.	E.3.4.2.	Date :	21/01/2021
Description of CAR					
For the parameter $N_{y,i}$ (The average population serviced by water purification systems in year y.					
The MR reports a value 412 on page 23. This value also considers the value from CPA 4 database, which was not monitored. Moreover, the average value is not used in ER calculation as these are done for each CPA separately. CME shall explain.					
Project participant response					Date :
A footnote has been added to the MR to clarify the same. The revised MR is being submitted.					21/01/2021
Documentation provided by project participant					
PoA 9948 MP4 MR2 Norway Kenya MR ver 2.1 21012021					
DOE assessment					Date:
The value in the MR is the average value across all the CPAs covered in this monitoring report. It was checked in the ER sheet that the ERs for each CPA and same is mentioned in section F of the MR. Thus, for each CPA, the corresponding $N_{y,i}$ value has been used for ER calculations.					21/01/2021
A footnote clarifying the value presented in the MR has been added now in the MR.					
Thus, the CAR stands closed.					

CAR ID	03	Section no.	E.3.4.2.	Date :	18/03/2021
Description of CAR					
UN issue#01					
The CPAs (9948-0023 to 9948-0037), implemented in Kenya, were included on 18/11/2018 and applied a f_{NRB} value (0.928) established as per the provisions of Information note SSC WG Meeting 37. Further, the parameter is determined by sourcing a default value (0.92) from UNFCCC SSC WG 37 th Meeting Report for Kenya and multiplying it with the percentage of population using non-renewable woody biomass/fossil fuel. However, it is not clear how: (a) the f_{NRB} value used from SSC WG meeting 37, Annex 14, is valid for the CPAs included on 18/11/2018 since the considered default value for Kenya expired on 18/09/2017 and a f_{NRB} value has been determined as monitoring parameter as per the PoA-DD (page 49) and CPA-DDs e.g. CPA-DD023 (page 15); and (b) the shares of renewable and non-renewable woody have been determined in line paragraph 7 of AMS-I.E. ver. 5 as defined in the PoA-DD and the CPA-DD.					
Project participant response					Date :
The CME wishes to draw the Verification Team's attention to the following:					15/04/2021
<ol style="list-style-type: none"> 1. Page 69 (for CPA type 2) and page 100 (for CPA type 3) of the registered PoA-DD dated 18/04/2017 states the following: 					

$f_{NRB,y}$	Fraction of woody biomass used in the absence of the project activity in year y that can be established as non-renewable. For biomass, the default values of f_{NRB} shall be used from EB67 . A survey, national, or regional data is conducted to determine the mix of fuels (% of biomass, % of other fuels) used in the baseline. <u>If a mixture of biomass and other fuels (e.g., fossil fuels) are used, a weighted average renewability factor shall be applied.</u>
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2. Also, page 82 (for CPA type 2) and page 115 (for CPA type 3) of the registered PoA-DD dated 18/04/2017 states the following in parameter table for $f_{NRB,y}$

Data/Parameter	$f_{NRB,y}$
Source of data	EB 67 Annex 22 Default Values for Fraction of Non-Renewable Biomass for Least Developed Countries and Small Island Developing States, combined with survey, national, or regional data to determine the percent of users using woody biomass and fossil fuel in the baseline scenario. If the displaced fuel is fossil fuel use the default value of 1.0. <u>If a mixture of woody biomass and fossil fuels is used in the absence of the project activity a weighted average value should be used, using surveys or national data.</u>
Measurement methods and procedures	The type of baseline fuel(s) used by target population will be determined via survey, national, or regional data. Parameter will be determined using the default values from EB67 Annex 22 for woody biomass and from the methodology for fossil fuels: If a mixture of woody biomass and fossil fuels is used in the absence of the project activity a weighted average value shall be applied, calculated through the following formula: $f_{NRB,y} = [\text{Default } f_{NRB} \text{ value}] * [\% \text{ of users using NRB}] + [1.0] * [\% \text{ of users using fossil fuels}]$

- a) Thus, from the aforesaid it is confirmed that the registered PoA-DD and its monitoring plan mandate the CME to use the default value of f_{NRB} as approved by EB67, Annex 22 (or it's extension thereof²⁸) and the continuous or at least biennial monitoring, as per PoA-DD, only requires monitoring the % of users using NRB and % of users using fossil fuels to update the value of f_{NRB} . The default value of f_{NRB} stated in the PoA-DD (EB67, annex 22) can only be changed at the time of renewal of the PoA and will be valid for the CPA included subsequently. Thus, in line with registered PoA/CPA-DD, in the monitoring report, the percentage of users using non-renewable biomass and percentage of users using fossil fuel in Kenya has been updated as the per national data and a weighted average value has been applied to determine $f_{NRB,y}$. Thus, no change in the MR is deemed required, given it is fully compliant with registered PoA-DD with respect to parameter f_{NRB} .
- b) Paragraph 19 of AMS-I.E., ver. 5, applicable specifically to PoA, states the following:

"19. The following further conditions apply for the value of fraction of non-renewable (f_{NRB}) applied in a component project activity (CPA) of a POA. The choice between (a) conduct own studies to determine the local f_{NRB} value and then apply those values in the CPAs; and (b) use default national values approved by the Board; shall be made ex ante. A switch from national value i.e. choice (b) to sub-national values i.e. choice (a) is permitted, under the condition that the selected approach is consistently applied to all CPAs."

Page 69 (for CPA type 2) and page 100 (for CPA type 3) of the registered PoA-DD dated 18/04/2017, thus, in line with option (b) of para 19 of AMS I.E. states the following:

*"For biomass, the default values of f_{NRB} **shall be used from EB67**. A survey, national, or regional data is conducted to determine the mix of fuels (% of biomass, % of other fuels) used in the*

²⁸ https://cdm.unfccc.int/Panels/ssc_wg/meetings/037/ssc_37_an14.pdf (Extension of EB 67 annex 22 as per para 3 of SSC WG 37 annex 14).

baseline"

Thus, Default value of f_{NRB} from UNFCCC SSC WG 37th Meeting Report for Kenya which is an extension of EB 67 annex 22 as per para 3 of SSC WG 37 annex 14 and approved in EB 68 (para 106) has been combined with national data (Biomass fuel market study, by EU-Nakuru County Sanitation Programme and Turnaround Africa Limited, 2016, page 17) for % population using non-renewable biomass / fossil fuel.

Documentation provided by project participant

N/A

DOE assessment

Date: 19/04/2021

The Default value of f_{NRB} from UNFCCC SSC WG 37th Meeting Report for Kenya is prescribed by EB 67 annex 22 as per para 3 of SSC WG 37th annex 14. The value sourced from this document was valid till 18/09/2017.

The PoA DD dated 18/04/2017 listed the parameter f_{NRB} as monitored parameter but had a provision added that only 'of users' need to be determined at CPA level. The default value of f_{NRB} was already fixed at PoA level as checked from the registered PoA DD. The default value sourced from SSC WG 37th annex 14 was valid at the time it was fixed at the PoA Level. The value doesn't require to be updated at the CPA level for any CPA included in the PoA, as per the registered PoA-DD, unless the PoA/CPA is renewed. Thus, the concerned CPAs included under the registered PoA-DD, on a date after 18/09/2017 are eligible to use the f_{NRB} value fixed in the registered PoA DD.

Thus, the CAR stands closed.

CAR ID	04	Section no.	E.3.1. and E.3.6.1.	Date :	18/03/2021
Description of CAR					
UN issue#05					
<p>The continuous availability of safe drinking water and the subsequent supplies are reported in the emission reduction spreadsheet. However, it is observed in the emission reduction spreadsheet that:</p> <ol style="list-style-type: none"> The CPA-DDs (section A.3) indicate that one tablet (UltraTab) treats 100 Liters whereas the emission reduction spreadsheet (Tab assumptions cell D8) indicates that Water purification capacity of one unit of UltraTab as 10,000 Liters; It is not clear what was supplied in case of UltraTab under columns E and AD (Tab sales database) e.g. whether UltraTab tablets are supplied or any device/water tank is provided to the institution. The water purification capacity of one unit of Multi-barrier UV is stated as 4, 088,232 liters water (Tab "Assumptions" Cell D10) and refers to the registered CPA-DD for CPA 04 whereas such value could not be traced back in the respective CPA-DD; The system continuous running end date (Tab sales database column AK) is indicated as year 2080 or more (i.e. cells AK2877, AK2907 and AK2931), which is beyond the device lifespan as described (i.e. 5-to-7 years) on page 15 of the monitoring report. 					
Project participant response					Date : 15/04/2021
<ol style="list-style-type: none"> As per table present on page 4 of section A.3 of latest version of CPAs 23 to 37 CPA-DDs, flow rate of UltraTab has been mentioned as 100L/Tablet whereas under capacity/lifespan 10,000 L/5 years expiry has been mentioned for UltraTAB. Please note that one pack of UltraTab contains 10 strips of 10 tablets each. Hence the total pack capacity is 10,000L (= 10 strips * 10 tablets * 100L). Thus, the value stated in the emission reduction spreadsheet (Tab "assumptions" cell D8) is in line with the section A.3 of the CPA-DDs. The technical specification documents have also been cross verified by the verification Team as listed in the verification report (Appendix 3, item /28/). In Sales Database worksheet of ER Calculator, in column E, total no. of UltraTAB packs supplied to the institute for the first time has been given (at the time of initial PO signature and supplying the tanks/Cannister/buckets in which the TABs are to be administered. In column AC, on the other hand, total number of UltraTAB packs supplied to the institution during subsequent supplies in the current monitoring period has been specified. E.g. refer institute with SF ID K1808657 (column B). Initially, 12 UltraTAB packs has been supplied to the institute (column E) while during the monitoring period 6 subsequent UltraTAB packs supplied to the institute (column AC). 					

- iii. The capacity of 4,088,232 L/unit (for Multi-barrier UV water) is sourced from Manufacturer technical specification document. The CME accepts oversight in ER spreadsheet assumption tab where the reference for the Multi-Barrier UV system capacity is mentioned as CPA-DD. The ER sheet has been revised to correct the same. Revised ER sheet is being submitted.
- iv. The “system’s continuous running end date” is not depicting the lifetime/lifespan of the device. It is merely a determinant to check the compliance with the following registered monitoring plan requirement:

$(N_{y,i} * R_{y,i})$ should not exceed the maximum output capacity of the system installed.

The ER sheet tab, ‘MP4 sales database’ has been revised to determine the aforesaid in a better manner (refer column AM:AN). The revised functionality in the ER model ensures that $(N_{y,i} * R_{y,i})$ * operational school days in the monitoring period, does not exceed the available treatment capacity for any school and the total consumed capacity (column AM) is lower of the two as a conservative measure. Please refer below:

1. The treatment capacity of a unit (column AH) is the sum of residual capacity from previous MP, if any, (column AB) and the supplies made during the monitoring period (column AC). For newly installed systems, it has been calculated as system’s initial installation capacity (assumptions D9:D11) and the supplies made during the monitoring period (column AC), if any.
2. The total consumption of drinking water per day per unit has been calculated (column AG) and represents $(N_{y,i} * R_{y,i})$
3. The start date of the WPS crediting (column AJ) in the monitoring period is considered as the latest of start date of MP4 or first day of the next month of its installation (column F).
4. The end date of WPS crediting (column AK) in the monitoring period is earliest of the end date of the monitoring period or the system breakdown date (column AI), if any.
5. In case treatment capacity of a unit (column AH) is 0, no CERs are claimed (given column AJ and AK are “NA”, and column AP is “No”).
6. Subsequently, the total number of available operational school days (column AL), falling between the start date (column AJ) and end date (column AK) of crediting for a school, has been calculated weighted on the basis of boarding and non-boarding population (column L:O).
7. If a WPS unit has treatment capacity (column AH) less than the capacity required to run the entire available operational days in the monitoring period (i.e. $N_{y,i} * R_{y,i}$ * available operational days) the residual capacity at end of MP (column AN) is calculated as 0. Otherwise, the residual capacity is calculated as net of treatment capacity (column AH) and consumed capacity during the monitoring period (column AM).
8. Limited by the treatment capacity consumed during the monitoring period (column AM), the credited school days for each system is calculated (column AO). Hence, the credited school days (column AO) is always less than or equal to available operational school days (column AL) for a given school.

The above approach is deemed better as it removes the confusion related to “continuous running end date” as well as calculates residual capacity at the end of MP4, based on operational school days during the monitoring period instead of total duration of monitoring period.

In case of Multi Barrier UV the expiry is 7 years with the earliest project device being installed in June 2017 hence no device shall end its lifetime before the end of the concerned monitoring period ending 21 Mar 2020. Besides, the UV bulb can be replaced to further extend the device lifetime further after 7 years.

Similarly, in case of UltraFLO/UltraTAB, the expiry is 5 years with the earliest UltraFLO device being installed in March 2018 and UltraTAB in July 2018 hence no UltraFLO/UltraTAB device shall end its lifetime before the end of the concerned monitoring period ending 21 Mar 2020. Besides, every-time a school receives a new supply of UltraFLO/UltraTAB, the lifetime of the system is automatically deemed renewed, the supplies being a consumable.

Documentation provided by project participant	
PoA 9948 MP4 MR2 Norway Kenya ER Sheet ver 3.0_15042021	
DOE assessment	Date: 19/04/2021
ER spreadsheet:	
a) The registered CPA DDs mention that 100L of water is treated by one UltraTAB Tablet. This information was cross checked with the manufacturer’s specification and found to be correct. The ER	

sheet mentions the UltraTab capacity as 10,000L. This capacity is deemed correct because one unit of Ultra Tab has 10 strips of 10 tablets each. Thus, 100 Tablets are provided to each school in one UltraTAB pack. The schools visited physically during the previous verification were found to have received UltraTAB packs with 10 strips of 10 tablets each. The number of UltraTAB packs received by a school were verified against the sales receipt / delivery note for schools sampled by CME during the monitoring period and were found to be correctly stated and hence accepted by the verification team. Thus, the UltraTAB capacity considered in the ER sheet is found to be correct.

- b) There is no other device/tank involved in UltraTAB water purification system. Column E and AC mention the number of UltraTAB packs any school has been provided (initially and subsequently supplied during the monitoring period respectively). All the schools mentioning '1' under column E have received one UltraTAB pack at the time of initial supply. Similarly, some schools received more than one UltraTAB pack as per the requirement of the school at the time of initial supply. For e.g. School ID K1808655 mentions '20' under column E, means that it has received 20 packs of Ultra Tab i.e., 2000 tablets (100 tablet in each pack * 20 packs). Column AC on the other hand refers to additional subsequent UltraTAB packs supplied to schools during the monitoring period. For E.g. school with SF ID K1807529 received 11 UltraTAB packs during the monitoring period as specified in column AC. The values of tablet packs received by a school were checked against the sales receipt/delivery note for schools sampled and monitored by the CME during the monitoring period and was found to be correctly stated in the ER sheet. Thus, the value considered in the ER sheet was found to be correct.
- c) The capacity for Multi Barrier UV was verified against the manufacturer's specification as the capacity was not mentioned in the CPA DD for CPA 9948-P1-0004-CP1. The cross-verification against manufacturer's specification has already been reported on page 21 of the FVR and appendix 3 of FVR. The ER sheet (tab: "Assumptions", cell F11) has been revised to mention the correct reference for Multi barrier UV capacity. Thus, it was accepted by the verification team.
- d) The continuous running end date was merely a determinant to check compliance with the registered monitoring plan requirement and is not linked with lifetime of the installed devices. The same has been removed by the CME from the revised ER sheet to avoid any confusion.

The revised ER sheet tab, 'MP4 Sales Database' now ensures that $(N_{y,i} * R_{y,i})$ * operational school days in the monitoring period, do not exceed the available treatment capacity for any school (column AH). It also confirms that the total consumed capacity (column AM) remains lower of the two in all cases.

The total consumed capacity during the monitoring period (column AM), residual capacity at the end of MP (column AN) and credited operational school days (column AO) have been correctly and conservatively calculated.

The verification team has checked all determinants from column AH:AP and confirms them to be correctly and accurately calculated and is conservative with respect to ER calculations.

The revised achieved emission reductions in the current monitoring period have reduced since the last submission request, thus are confirmed to be conservative, accurate and credible.

The verification team further confirmed that UltraFLO/UltraTAB expiry is 5 years. The first system was installed in 2019 in Kenya, thus no device will expire before the end of the current monitoring period.

Thus, the CAR is closed.

Table 4. FARs from this verification

FAR ID	01	Section no.	E.3.4.2.	Date	19/04/2021
Description of FAR					
DOE involved in subsequent verifications shall ensure that monitoring frequency of parameter "operational units" is atleast, biennial, in line the with monitoring methodology requirements.					
Project participant response					Date: DD/MM/YYYY
NA					
Documentation provided by project participant					

NA	
DOE assessment	Date: DD/MM/YYYY
NA	

FAR ID	02	Section no.	E.3.4.2.	Date : 19/04/2021
Description of FAR				
DOE involved in subsequent verifications shall ensure that the parameter QPW_y is determined accounting the operational school days instead of duration of the concerned monitoring period, as applicable.				
Project participant response				Date: DD/MM/YYYY
NA				
Documentation provided by project participant				
NA				
DOE assessment				Date: DD/MM/YYYY
NA				

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Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
03.0	31 May 2019	Revision to: <ul style="list-style-type: none"> Ensure consistency with version 02.0 of the “CDM validation and verification standard for programmes of activities” (CDM-EB93-A08-STAN); Make structural and editorial improvements.
02.0	29 December 2017	Revision to align with the requirements of the “CDM validation and verification standard for programme of activities” (version 01.0).
01.0	5 June 2015	Initial publication.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: programme of activities, verifying and certifying		