




Verification and Certification report for GS4GG project activities

(Gold Standard for the Global Goals)

VERIFICATION AND CERTIFICATION REPORT

Title of the project activity	Multi-Layer Household Water Filtration System in Kenya	
Reference number of the project activity	GS11207	
Version number of the verification and certification report	04	
Completion date of the verification and certification report	16/02/2022	
Monitoring period number and duration of this monitoring period	MP number: first MP dates: 10/10/2020 to 31/07/2021 (both days included)	
Version number of monitoring report to which this report applies	05	
Crediting period of the project activity corresponding to this monitoring period	10/10/2020 to 09/10/2025 (both days included)	
Project Representative	The official focal point and project developer: Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd. The project owner: Climate Neutral Kenya Limited	
Host Party	Republic of Kenya	
Activity Requirements applied	<input checked="" type="checkbox"/> Community Services Activities <input type="checkbox"/> Renewable Energy Activities <input type="checkbox"/> Land Use and Forestry Activities/Risks & Capacities <input type="checkbox"/> N/A	
Methodology (ies) applied and version number	Methodology for Emission Reductions from Safe Drinking Water Supply (Version 1.0)	
Product Requirements applied	<input checked="" type="checkbox"/> GHG Emissions Reduction & Sequestration <input type="checkbox"/> Renewable Energy Label <input type="checkbox"/> N/A	
SDG Contributions targeted (as per approved PDD)	Goal 6: Clean Water and Sanitation Goal 7: Affordable and Clean Energy Goal 8: Decent work and economic growth Goal 13: Climate Action	
Estimated amount of annual average certified SDG impact (as per approved PDD)	SDG 6 - Clean Water and Sanitation	Total number of person.days served with satisfactory level of safe water - 692,898,179 Person.days
	SDG 7 - Affordable	Number of water purifiers

	and Clean Energy	sold each year – 128,970 units
	SDG 8 - Decent Work and Economic Growth	<p>Number of males and females employed by the project - 12 jobs created including 6 males and 6 females</p> <p>Percentage of employees with salaries paid at par with the average wage of Kenya – 100%</p>
	SDG 13 - Climate Action	GHG emission reductions - 459,638 tCO ₂ e/year
Total amount of certified SDG impact (as per approved methodology) achieved in this monitoring period	<p>SDG 7 -</p> <p>From 10/10/2020 to 31/12/2020, Number of water purifiers sold: 467,123 units</p> <p>From 01/01/2021 to 31/07/2021, Number of water purifiers sold: 0 unit</p> <p>In the 1st monitoring period, Number of water purifiers sold: 467,123 units</p> <p>SDG 6 -</p> <p>From 10/10/2020 to 31/12/2020, Total number of person.days served with satisfactory level of safe water: 92,724,201 person.days</p> <p>From 01/01/2021 to 31/07/2021, Total number of person.days served with satisfactory level of safe water: 347,258,860 person.days</p> <p>In the 1st monitoring period, Total number of person.days served with satisfactory level of safe water: 439,983,061 person.days</p> <p>SDG 8 –</p> <p>From 10/10/2020 to 31/12/2020, Number of males and females employed by the project: 12 jobs created including 6 males and 6 females</p> <p>From 01/01/2021 to 31/07/2021, Number of males and females employed by the project: 12 jobs created including 6 males and 6 females</p> <p>In the 1st monitoring period, Number of males and females employed by the project: 12 jobs created including 6 males and 6 females</p> <p>From 10/10/2020 to 31/12/2020, Percentage of employees with salaries paid at par with the average wage of Kenya – 100%</p> <p>From 01/01/2021 to 31/07/2021, Percentage of employees with salaries paid at par with the average wage of Kenya – 100%</p> <p>In the 1st monitoring period, Percentage of employees with salaries paid at par with the average wage of Kenya – 100%</p> <p>SDG 13 –</p> <p>GHG emission Reductions (GS VERs)</p>	

	10/10/2020-31/12/2020 : 59,586 tCO ₂ e 01/01/2021-31/07/2021 : 222,984 tCO ₂ e 10/10/2020-31/07/2021 : 282,570 tCO ₂ e
Name of VVB	VVB Name: Shenzhen CTI International Certification Co., Ltd (CTI)
Name, position and signature of the approver of the verification and certification report	 Wang Guolian Technical Reviewer/Approver

SECTION A. Executive summary

The Project activity involves sale of Multi-Layer water purifiers as a way to provide safe drinking water for households in Makueni County, Trans Nzoia County, Kirinyaga County, Bungoma County and Nakuru County of Kenya. The Multi-Layer water purifiers is a way to provide safe drinking water for households to simply pour untreated water into the water purifier. The project introduces zero-energy water filtration technology for local households, which belongs to household water treatment technologies (HWT). The water filtration system requires no energy input or consumables. It's a kind of gravity household water purifiers.

The project activity provides enough water to meet and exceed the World Health Organization recommended domestic water consumption of 7.5 liters per capita per day and via checking the Business plan provided by Project Owner/8/, It is estimated that about 644,850 water purifiers will be sold and more than 2.5 million people would have access to clean water during the first crediting period.

The estimated emission reduction from the project is 459,638 tCO₂e per year during the renewable 5-year crediting period and the Certified Emissions Reduction for the current monitoring period from 10/10/2020 to 31/07/2021 is 282,570 tCO₂e with 467,123 units of water purifiers have been sold.

Scope of Verification

This verification is an independent and objective review and ex-post determination of the monitored reductions in GHG emissions by the VVB. The verification addresses the implementation and operation of the GS PA and tests the data and assertions set out in the monitoring report based on the following:

- (i) The GS PDD of the project/3/
- (ii) The approved methodology mentioned in the PDD, Methodology for Emission Reductions from Safe Drinking Water Supply (Version 1.0)/37/
- (iii) The registered SDG monitoring parameters in the PDD
- (iv) the Gold Standard for the Global Goals Principles and Requirements/49/,
- (v) the Gold Standard for the Global Goals Safeguarding Principles & Requirements/50/,
- (vi) the Gold Standard for the Global Goals Community Services Activity Requirements/51/,
- (vii) the Gold Standard for the Global Goals GHG Emissions Reduction & Sequestration Product Requirements/53/,
- (viii) the Gold Standard for the Global Goals Stakeholder Consultation and Engagement Requirements /52/,
- (ix) Validation and Verification Body requirements, Product requirements and references relevant to the project activity's reported emission reductions

The verification has considered both quantitative and qualitative aspects on stated/reported emission reductions. The monitoring report (all versions) and corresponding supporting documentation was assessed in accordance with the rules defined by GS4GG, as appropriate to the PA. The verification is not meant to provide any consulting or recommendations to the PP/others. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

Verification process

The verification has been performed as described in the Gold Standard for the Global Goals Principles and Requirements/49/ as below process,

- a. Desk review of the GS MR (version 01 dated 07/08/2021)/1/, ER sheet/2/ and the relevant documents
- b. On-site assessment (06/09/2021~17/09/2021)
- c. Issuance of draft verification report & verification protocol
- d. Desk review of the revised MR and related documents
- e. Resolution of the raised CAR
- f. Issuance of the final verification report
- g. Independent technical review of the draft verification report and final/revised documentation (e.g., Monitoring Report, corresponding ER sheet and evidences)
- h. Reporting and closure of TR comments/findings and final approval for the decision made
- i. Issuance of final verification report to contracted PD (or authorized representatives) and submission of request for issuance, as appropriate.

Conclusion

CTI has performed the verification of the GS PA “Multi-Layer Household Water Filtration System in Kenya” having GS Ref. Number GS11207 for the 1st monitoring period from 10/10/2020 to 31/07/2021. The verified emission reductions amount to 282,570 tCO_{2e} in the aforesaid monitoring period.

The technical parameters of the water filters are consistent with the PDD, and not changed since validation/4/.

In CTI’s opinion, the GHG emission reductions reported for the project in the GS4GG 1st monitoring report are fairly stated. CTI confirmed that each SDG Impacts were calculated correctly on the basis of the methodology/37/ and the monitoring plan contained in the PDD/3/.

CTI confirms that each SDG Impacts are calculated without material misstatements. Based on the evidence and information that are considered necessary to guarantee that each SDG Impacts are appropriately calculated, CTI is able to certify that each SDG Impacts from the project “Multi-Layer Household Water Filtration System in Kenya” during the indicated monitoring period. Therefore, this is being submitted for request for issuance, as per GS procedures as applicable.

SECTION B. Verification team, technical reviewer and approver**B.1. Verification team member**

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk/document review	Remote verification	Interviews	Validation findings
1.	Team Leader & Verifier	IR	Liu	Jia	CTI	√	√	√	√
2.	Local expert	EI	Medard	Doreen	-	-	√	√	-
3.	Local expert	EI	Nyakundi	Elijah	-	-	√	√	-
4.	Local expert	EI	Kiplang'AT Mibei	Roland	-	-	√	√	-

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 VVB or outsourced entity)
1.	Technical reviewer/Approver	IR	Wang	Guolian	CTI

SECTION C. Application of materiality

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.	Human error in the quantification of emissions	Low	Human error is likely to occur if personnel are unfamiliar with, or not well trained regarding, emissions processes or data recording	Depending on the monitoring period being verified, conduct increased verifying during the months when there is a greater likelihood of errors and issues with data quality control due to project participants' leave schedules
2.	Undue reliance on a poorly designed information system, which may have few effective quality controls	Low	Use of spreadsheets without adequate controls related to data changes/updates, version tracking, traceability, security	Depending on how data is generated, processed, and reported, place greater emphasis on verifying data captured and processed manually and/or in spreadsheets versus those that are generated from an automated system
3.	Omissions and misstatements in data transfer from hand written notes into digital Excel ER spreadsheet	Medium	Ineffective quality control of data transfer due to unclear QA/QC procedure	Check QM procedure/manual. PD may demonstrate how to transfer data and how this is crosschecked. Conduct interview with related personnel whether procedure is actually conducted but not adequately described.
4	Sample	Medium	Sample size is not suitable; or the surveyed end users are not random	Cross-check the procedure to identify the sample size against the sample guideline/31/, sample standard/32/ and TPDDTEC (Version 3.1)/38/. CTI conducted a random sample following the sample standard during site-visit period, visited randomly selected sampled end users who are partial sourced from the sample conducted by PP. Based on the result of acceptance sampling, the monitoring records are deemed acceptable.

On the basis of the risk analysis the verification has been planned. A detailed audit/verification plan has been prepared and submitted to the project participant(s) in due time before the remote verification.

C.2. Consideration of materiality in conducting the verification

The errors identified in the project are below the threshold limit of materiality and hence not material. The GHG emission reductions are calculated without material misstatements.

SECTION D. Means of verification

D.1. Desk review

Desk review of all documents provided by PD and publicly available documents relevant for the verification including sampling plan, monitoring plan, monitoring report, monitoring methodology, project design document, applicable tools in particular attention to the frequency of measurements, QA/QC procedures and other relevant documents was conducted by CTI.

The main documents are listed below:

- (i) the GS4GG Monitoring Report Version 01 dated 07/08/2021/1/
- (ii) the emission reduction calculation spreadsheet related to this monitoring period/2/.
- (iii) the last revision of the PDD including the monitoring plan/3/.

Other supporting documents, such as publicly available information and background information were also reviewed.

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

D.2. Remote verification

Duration of remote verification: 06/09/2021~17/09/2021				
No.	Activity performed on-site	Site location	Date	Team member
1.	Opening meeting call - interviewed representatives of PD, Project Owner and staffs - discussed the document evidence	N/A	06/09/2021	Liu Jia
2.	-Sent mail with questionnaire to local experts for call interview with randomly selected household samples who participated in the baseline survey	N/A	07/09/2021	Liu Jia
3.	-Sent mails to local stakeholders to get the comments to the project	N/A	07/09/2021	Liu Jia
4.	Local experts conducted site interview with household samples following the questionnaire	N/A	08/09/2021~16/09/2021	Local experts
5.	Findings discussion and Close Meeting	N/A	17/09/2021	Liu Jia

According to the section 4.1.1 b of COVID 19: INTERIM MEASURES/39/ issued by GS, if a site visit cannot be postponed due to significant impact of delaying the site visit on project developer due to commitment as per GS-VERs delivery agreement, so VVB replace mandatory remote verifications with remote audits. And the monitoring period is no more than one year that not exceeding the requirement in 4.3.1 of COVID 19: INTERIM MEASURES/39/ that "The maximum monitoring period that VVB can verify based on remote audit is two years".

Hence the site visit was not conducted by the verification team, and the below alternatives have been conducted by the verification team as remote audit in line with the requirements from COVID 19: INTERIM MEASURES/39/.

1. CTI used video conference call conducting the opening meeting and interviewed representatives of PD and project owner and staffs, PD and project owner introduced the design and operation of the project and VVB discussed the document evidence with PD based on desk review results.
2. CTI sent mails to local stakeholders including representatives to get the comments to the project. Refer to section D.3 for the details of the survey results.
3. During desk review, to check if the values from monitoring sampling survey used in MR are correct, CTI randomly selected end user samples from the samples list of the sampling survey conducted by project owner and prepared the related questionnaires, sent the mail with questionnaire to local experts. Local experts conducted site interview with household samples following the questionnaire provided by CTI. And scanned all the filled questionnaires/58/ to CTI. Refer to section D.3 for the details of the questionnaire.
4. The team discussed findings and conducted close meeting via phone call with PD and project owner.

In conclusion, although the site visit was not conducted by CTI, through local expert conducted site visit to samples by filling questionnaires/58/ and CTI conducted interview call, the requested information for the verification is got by CTI successfully and can be assessed by the VVB to finish the verification.

D.3. Interviews

D.3.1. Interviews with PD, Project Owner, local stakeholders and sampled end users

No.	Interviewee			Date	Subject, Reference Number/ID	Team member
	Last name	First name	Affiliation			
1.	Zhu	Yanan	Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd./ Senior Project Manager	06/09/2021	<ul style="list-style-type: none">- General aspects of the project- Water Purifiers sale status- Project database- Sales plan and records- Quality management system- Involved personnel and responsibilities- Training and practice of the operational personnel- Implementation of the project- Sampling Plan- Baseline survey- Data uncertainty and residual risks- Procedural aspects of the validation- Monitoring plan- Emission reduction calculation	Liu Jia Local Experts
2.	Lu	Juan	Climate Neutral Kenya Limited/Staffs	06/09/2021	<ul style="list-style-type: none">- General aspects of the project- Water Purifiers sale status- Sales plan and records- Project database- End users database- Environmental aspects- Job opportunities- Salary level- Water quality and quantity	
3.	Korir	Josphat				
4.	Mwai	Irene				
5.	Shiundu	Vincent	Local Stakeholders/ NGO, officers	07/09/2021	<ul style="list-style-type: none">- Local Stakeholder Consultation issues- SDG impacts- Continuous Inputs- Grievances mechanism	Liu Jia
6.	Nanji	Micheni				
7.	Sirma	Cecilia				
8.	Rugut	Kombe	Tongaren, Bungoma/JMP &water quality samples	07/09/2021	<ul style="list-style-type: none">- Name- Gender- Age- Location- Contact No.- Water purifier Serial Number- The one who mainly use the water purifier- Participated in the hygiene education campaigns survey- Finished the hygiene campaigns	Local Experts
9.	Ogindo	Asma	Gichugu, Kirinyaga/JMP &water quality samples	08/09/2021		
10.	Ngorialuk	Ngorialuk	Mbitini, Makueni/JMP &water quality samples	10/09/2021		

11.	Safari	Safari	Elburgon, Nakuru/JMP& water quality samples	11/09/2021	<p>and hygiene practice questionnaire in Jun. 2021</p> <ul style="list-style-type: none"> - know the questions related to drinking water and hygiene - any differences for your answers to the questionnaire - time for buy water purifier - start using the water purifier time - taken samples for water Quality Testing - if Water quality good 	
12.	Jama	Patrick	Cherang'any, Trans Nzoia/JMP&w ater quality samples	12/09/2021		
13.	Chepkok	Genevieve	Webuye West, Bungoma/JMP &water quality samples	07/09/2021		
14.	Nyokabi	Jackson	Webuye West, Bungoma/JMP &water quality samples	07/09/2021		
15.	Muimi	Mildred	Bumula, Bungoma/JMP &water quality samples	07/09/2021		
16.	Rege	Muktar	Central, Kirinyaga/JMP &water quality samples	07/09/2021		
17.	Muthuri	Chol	Kamara, Nakuru/JMP& water quality samples	07/09/2021		
18.	Mbithi	Linnet	Lare, Nakuru/JMP& water quality samples	07/09/2021		
19.	Gathegi	Kariuki	Kibwezi, Makueni/JMP &water quality samples	08/09/2021		
20.	Maiyoro	Angel	Bungoma East, Bungoma/JMP &water quality samples	08/09/2021		
21.	Migwi	Don	Central, Trans Nzoia/JMP&w ater quality samples	08/09/2021		
22.	Nyanje	Chilemba	Mbooni, Makueni/JMP &water quality samples	08/09/2021		
23.	Boi	Erick	Gilgil, Nakuru/JMP& water quality samples	08/09/2021		
24.	Sigei	Nura	Cherang'any, Trans Nzoia/JMP&w ater quality samples	09/09/2021		

25.	Kithuka	Amos	Mwea, Kirinyaga/JMP & water quality samples	09/09/2021		
26.	Mboya	Stella	Central, Trans Nzoia/JMP&water quality samples	09/09/2021		
27.	Wathika	Asiya	Central, Trans Nzoia/JMP&water quality samples	09/09/2021		
28.	Froome	Jebichii	Kuresoi, Nakuru/JMP&water quality samples	09/09/2021		
29.	Choge	Wanjiku	Kilome, Makueni/JMP & water quality samples	09/09/2021		
30.	Egesa	Judy	Central, Trans Nzoia/JMP&water quality samples	09/09/2021		
31.	Shikanda	Vivian	Makindu, Makueni/JMP & water quality samples	10/09/2021		
32.	Kaggia	Kabisa	Keringet, Nakuru/JMP&water quality samples	10/09/2021		
33.	Ochiang	Muthoni	Nakuru Municipal, Nakuru/JMP&water quality samples	10/09/2021		
34.	Rutu	Ouma	Olenguruone, Nakuru/JMP&water quality samples	10/09/2021		
35.	Nzioki	Harry	Njoro, Nakuru /JMP&water quality samples	10/09/2021		
36.	Lelel	EFei	Mau Narok, Nakuru /JMP&water quality samples	11/09/2021		
37.	Odhiamb o	Salim	Cheptais, Bungoma/JMP & water quality samples	11/09/2021		
38.	Muturi	Amail	Njoro, Nakuru/JMP&water quality samples	11/09/2021		

39.	Bashir	Kemunto	Matiliku, Makueni/JMP & water quality samples	11/09/2021		
40.	Lihalakha	Elijah	Kibwezi, Makueni/JMP & water quality samples	11/09/2021		
41.	Ngongo	Murugi	Bungoma North, Bungoma/JMP & water quality samples	11/09/2021		
42.	Kiende	Elvis	Kimilili-Bungoma, Bungoma/JMP & water quality samples	12/09/2021		
43.	Muchangi	Felix	Central, Trans Nzoia/JMP & water quality samples	12/09/2021		
44.	Suleiman	Talaso	Gichugu, Kirinyaga/JMP & water quality samples	12/09/2021		
45.	Halake	Jebet	Gichugu, Kirinyaga/JMP & water quality samples	12/09/2021		
46.	Chemtai	Abdikadir	Ndia, Kirinyaga/JMP & water quality samples	12/09/2021		
47.	Timbilil	Samantha	Ndia, Kirinyaga/JMP & water quality samples	12/09/2021	<ul style="list-style-type: none"> - Name - Gender - Age - Location - Contact No. - Water purifier Serial Number - Household Size in 2021 - Method treat water in baseline scenario - Method collect water in baseline scenario - Stove used in baseline scenario - Fuel used in baseline scenario - Sources of fuels - Fuels collected distance - Fuels collected time - Seasonal variations impact - If participated sample survey - If the one uses water purifier - Monitoring last time - Time for buy water purifier 	Local Experts
48.	Koskei	Ekal	Elburgon, Nakuru/PS&W CFT samples	11/09/2021		
49.	Tarus	Joshua	Cherang'any, Trans Nzoia/PS&WC FT samples	13/09/2021		
50.	KibiFet	Abdi	Gichugu, Kirinyaga/PS&WCFT samples	09/09/2021		
51.	Rotich	Carolyne	Cheptais, Bungoma/PS&WCFT samples	07/09/2021		
52.	Kirimi	Gitonga	Kisau, Makueni/PS&WCFT samples	10/09/2021		
53.	Awino	Ndoro	Mwea, Kirinyaga/PS&WCFT samples	09/09/2021		

54.	Bwakali	tiberius	Mwea, Kirinyaga/PS& WCFT samples	09/09/2021	<ul style="list-style-type: none"> - Started use water purifier time - Carbon credits ownership transferred - Use time per day - Water consumed per day - Ever stop - If still boiling - Ever repair or replaced - Use issue - Any comments 	
55.	Syombua	Njoroge	Naivasha, Nakuru/PS&W CFT samples	11/09/2021		
56.	Shariff	Bancy	Ndia, Kirinyaga/PS& WCFT samples	09/09/2021		
57.	Maiyani	Omondi	Mwea, Kirinyaga/PS& WCFT samples	09/09/2021		
58.	Murunga	Philemon	Gichugu, Kirinyaga/PS& WCFT samples	09/09/2021		
59.	Mahamed	Joan	Ilima, Makueni/PS& WCFT samples	10/09/2021		
60.	Lessonet	Judith	Olenguruone, Nakuru/PS&W CFT samples	11/09/2021		
61.	Mwinyi	Dickson	Central, Trans Nzoia/PS&WC FT samples	13/09/2021		
62.	Ngari	Wakiuru	Bahati, Nakuru/PS&W CFT samples	11/09/2021		
63.	Kyalo	Benaiah	Saboti, Trans Nzoia/PS&WC FT samples	13/09/2021		
64.	Nzisa	Samson	Kibwezi, Makueni/PS& WCFT samples	10/09/2021		
65.	Kyalo	Angeline	Saboti, Trans Nzoia/PS&WC FT samples	13/09/2021		
66.	Okello	Salim	Bumula, Bungoma/PS& WCFT samples	07/09/2021		
67.	Kiama	Akuji	Makindu, Makueni/PS& WCFT samples	10/09/2021		
68.	Boru	Kyalo	Cherang'any, Trans Nzoia/PS&WC FT samples	14/09/2021		
69.	Masinde	Kariuki	Tongaren, Bungoma/PS& WCFT samples	07/09/2021		
70.	Matara	Belinda	Kuresoi, Nakuru/PS&W CFT samples	11/09/2021		

71.	Ntinyari	Onyango	Bungoma East, Bungoma/PS&WCFT samples	07/09/2021		
72.	Hassan	Kaingu	Mtito Andei, Makueni /PS&WCFT samples	10/09/2021		
73.	Mbogo	Hillary	Central, Trans Nzoia/PS&WCFT samples	14/09/2021		
74.	Chawa	Junior	Olenguruone, Nakuru/PS&WCFT samples	12/09/2021		
75.	Ahmed	Ibrahim	Naivasha, Nakuru/PS&WCFT samples	12/09/2021		
76.	Chesoni	Muthoni	Bungoma West, Bungoma/PS&WCFT samples	08/09/2021		
77.	Mutisya	Grace	Naivasha, Nakuru/PS&WCFT samples	12/09/2021		
78.	Mutai	Natara	Kimilili-Bungoma, Bungoma/PS&WCFT samples	08/09/2021		
79.	Omwancha	Isaac	Bahati, Nakuru/PS&WCFT samples	12/09/2021		
80.	James	Nyambu	Gilgil, Nakuru/PS&WCFT samples	12/09/2021		
81.	Kiragu	Gideon	Central, Trans Nzoia/PS&WCFT samples	14/09/2021		
82.	Lemayian	Mulongo	Kwanza, Trans Nzoia/PS&WCFT samples	14/09/2021		
83.	Kambi	Doreen	Lare, Nakuru/PS&WCFT samples	12/09/2021		
84.	Nyongesa	Trevor	Kaplamai, Trans Nzoia/PS&WCFT samples	14/09/2021		
85.	Bulle	Fred	Webuye West, Bungoma/PS&WCFT samples	08/09/2021		
86.	Chimera	Bishara	Kimilili-Bungoma, Bungoma/PS&WCFT samples	08/09/2021		

87.	Ambaka	Lawrence	Bungoma South, Bungoma/PS& WCFT samples	08/09/2021		
88.	Wanjau	Odhiamb o	Kasikeu, Makueni/US samples	10/09/2021	<ul style="list-style-type: none"> - Name - Gender - Age - Location - Contact No. - Water purifier Serial Number - Household Size in 2021 - If participated sample survey - If the one uses water purifier - Time for buy water purifier - Started use water purifier time - If treat water safe before drink - Frequency of using water purifier - Last using time - Ever stop - If under using 	Local Experts
89.	Irungu	Kitonga	Nakuru, Olenguruone/ US samples	13/09/2021		
90.	Nakhumicha	Njuki	Gichugu, Kirinyaga/US samples	09/09/2021		
91.	Muindi	Johnes	Bumula, Bungoma/US samples	08/09/2021		
92.	Hinga	Kinyua	Kwanza, Trans Nzoia/US samples	16/09/2021		
93.	Nkirote	Lawrence	Central, Kirinyaga/US samples	09/09/2022 1		
94.	Kurgat	Godana	Elburgon, Nakuru/US samples	13/09/2021		
95.	Ndambiri	Gathee	Mtito Andei, Makueni/US samples	10/09/2021		
96.	Odone	Mumo	Mbogoini, Nakuru/US samples	13/09/2021		
97.	Mukami	Bochere	Bahati, Nakuru/US samples	13/09/2021		
98.	Wangare	Wanjiku	Kisau, Makueni/US samples	13/09/2021		
99.	Waki	Safara	Mwea, Kirinyaga/US samples	13/09/2021		
100.	Apiyo	Kwemoi	Bahati, Nakuru/US samples	13/09/2021		
101.	Irungu	Bishara	Kaplamai, Trans Nzoia/US samples	15/09/2021		
102.	Ngaruiya	Vatusia	Central, Trans Nzoia/US samples	15/09/2021		
103.	Okello	Wambui	Endebess, Trans Nzoia/US samples	15/09/2021		
104.	Tangus	Madaha	Bumula, Bungoma/US samples	08/09/2021		
105.	Kiarie	Monica	Gichugu, Kirinyaga/US samples	09/09/2021		

106	Abdinoor	Friday	Mau Narok, Nakuru/US samples	14/09/2021		
107	Mwikali	John	Naivasha, Nakuru/US samples	14/09/2021		
108	Kwemoi	Hannah	Bungoma South, Bungoma/US samples	08/09/2021		
109	Ngumi	Irine	Cherang'any, Trans Nzoia/US samples	15/09/2021		
110	Muriu	Lawrence	Kisau, Makueni/US samples	10/09/2021		
111	Nzisa	Jalil	Mbogoini, Nakuru/US samples	14/09/2021		
112	Jelimo	Abdiaziz	Njoro, Nakuru/US samples	14/09/2021		
113	Kamama	Anthony	Endebess, Trans Nzoia /US samples	16/09/2021		
114	Nur	Gideon	Gichugu, Kirinyaga/US samples	09/09/2021		
115	Kombo	Muli	Mwea, Kirinyaga/US samples	09/09/2021		
116	Yaa	Umazi	Elburgon, Nakuru/US samples	14/09/2021		
117	Ebei	Ouma	Kibwezi, Makueni/US samples	11/09/2021		
118	Gitura	Judy	Kilungu, Makueni/US samples	11/09/2021		
119	Deya	Amaziah	Rongai, Nakuru/US samples	15/09/2021		
120	Waibara	Abigail	Kilome, Makueni/US samples	11/09/2021		
121	Morang'a	Ismail	Makindu, Makueni/US samples	11/09/2021		
122	Maina	Idris	Kilungu, Makueni/US samples	12/09/2021		
123	Patel	Hasnaa	Mt. Elgon., Bungoma/US samples	08/09/2021		
124	Muthini	Ekiru	Endebess, Trans Nzoia/US samples	16/09/2021		

125	Gitura	Thoya	Matiliku, Makueni/US samples	12/09/2021		
126	Owino	Jaali	Fete, Makueni/US samples	12/09/2021		
127	Umar	Abdi	Kilome, Makueni/US samples	12/09/2021		

D.3.2. Type of Questions asked by the team members:

The questions in the questionnaires asked were basically based on requirements of GS4GG/49/. The main topics included, but not limited to, the followings:

For JMP&water quality sample end users,

1. General information of JMP&water quality sample end users
 - a. Name
 - b. Mobile No.
 - c. Age
 - d. Gender
 - e. Location
 - f. Water purifier Serial Number
 - g. Are you the one who mainly use the water purifier in family
2. Water hygiene education campaigns
 - h. Have you participated in the hygiene education campaigns survey in Jun. 2021?
 - i. Have you finished the hygiene campaigns and hygiene practice questionnaire in Jun. 2021?
 - j. Did you know the questions related to drinking water and hygiene?
 - k. Is there any differences for your answers to the questionnaire (contrast the answers with interviewee)?
3. Water Quality Testing
 - l. When did you buy the water purifier?
 - m. When did you start using the water purifier?
 - n. Is there anyone from Climate Neutral Kenya Limited visited to end-user' homes to take water quality samples for water Quality Testing in Jun. 2021?
 - o. If yes, where did they take the water from?
 - p. and how many samples did they take?
 - q. Do you think Water quality was good for drink after using water purifier?

For PS&WCFT sample end users,

1. General information of PS&WCFT sample end users
 - a. Name
 - b. Mobile No.
 - c. Age
 - d. Gender
 - e. Location
 - f. Water purifier Serial Number
 - g. Household Size in 2021
2. Baseline
 - h. Before using the water purifier, what do you use to treat drinking water in daily life?
 - i. Before using the water purifier, how do you collect drinking water in daily life?
 - j. Before using the water purifier, which kinds of stove did you use exactly for boiling water?
 - k. Before using the water purifier, which kinds of fuel did you use for boiling water?

3. Project:

- l. Are you the one who mainly use the water purifier in family?
- m. Have you participated in the monitoring survey in Jan. 2021?
- n. How long did the monitoring activity lasted in your home?
- o. If included weekends and holidays?
- p. When did you buy the water purifier?
- q. Did you get the purchase receipt?
- r. When did you start using the water purifier?
- s. Do you know if you use water purifier, the carbon credits ownership has been transferred to Climate Neutral Kenya Limited?
- t. And if yes, how did you know that?
- u. How many time did your family use the water purifier per day in year 2021?
- v. How much water did your family consume per day in year 2021?
- w. After using the water purifier, did you stop boiling the water?
- x. After using the water purifier, if still boiling water, which kinds of fuel did you use?
- y. Did you ever repair or replacement water purifier?
- z. if Yes, which was repaired or replaced? how much cost?
- aa. Do you know how to contact Climate Neutral Kenya Limited for water purifier issues?
- bb. Do you think Water quality was good for drink after using water purifier?
- cc. Do you have any comments to the water purifier or Climate Neutral Kenya Limited?

For US sample end users,

1. General information of US sample end users

- a. Name
- b. Mobile No.
- c. Age
- d. Gender
- e. Location
- f. Water purifier Serial Number
- g. Household Size in 2021

2. US Survey result

- h. Are you the one who mainly use the water purifier in family?
- i. Have you participated in the usage survey in 2021?
- j. When did you buy the water purifier?
- k. When did you start using the water purifier?
- l. Did you treat water to be safe before you drink?
- m. How did you treat water to be safe?
- n. How often do you use the water purifier?
- o. When was the last time did you use the water purifier?
- p. Did you use the water purifier in last two days?
- q. Is there a safe storage container that contains the filtered water in it?
- r. If no, when was the last time there was filtered water in it?
- s. Can you explain how to filter the water use purifier?
- t. Was there any issues when you used water purifier?
- u. If the water purifier is under using now? if No, what's the reason?
- v. Did you ever stop using water purifier? if Yes, what's the reason?

The feedback from all the 120 samples from VVB questionnaires/58/ are listed as below:

1. General information of interviewees

2. All the interviewees provided the general information
3. For the JMP & Water quality sampling survey information, by comparing with the information in the VVB questionnaires/58/ and PP sampling survey results for JMP & Water quality, CTI confirmed that all the information is consistent.
4. For the PS & WCFT sampling survey information, by comparing with the information in the VVB questionnaires/58/ and PP sampling survey results for PS & WCFT, CTI confirmed that all the information is consistent.
5. For the US sampling survey information, by comparing with the information in the VVB questionnaires/58/ and PP sampling survey results for US, CTI confirmed that all the information is consistent.

Verification Team along with remote verification and local experts conducted the site interview, objective evidence collections, data generation and recording analysis also considered the views obtained in these interviews while arriving at Verification Opinion.

D.4. Sampling approach

Sampling approach by PD

The sampling design carried out by the project is demonstrated as below:

Before preparing the MR, project owner and PD conducted the monitoring sampling survey for investigate the values used for this monitoring period for monitored parameters, which is verified as in line with the requirement in the PDD monitoring plan/3/ and methodology requirement/37/. Six monitored parameters including Water hygiene education campaigns, $M_{q,y}$, $HN_{p,y}$, $U_{p,y}$, QPW_p and $X_{cleanboil,y}$ are determined based on the monitoring sampling survey which has been assessed one by one as below,

Water hygiene education campaigns

Water hygiene education campaign monitoring has been conducted concurrently using the same sample with Water Quality Testing which has been verified by checking the sample information table/13/ and this method is confirmed as in line with the PDD.

PD has determined a sample size of 101 for survey of Water Hygiene Education Campaigns which is in line with the PDD and approach as defined in the Table 3 of Annex 4 of *TPDDTEC* (Version 3.1)/38/. Via checking the records of randomly selected samples/14/, it is verified that PD has randomly selected the 101 samples from 467,123 water purifiers users using MS Excel software at the beginning of 2021.

Via checking the sample information table/13/, it is confirmed that hygiene education campaigns, and Water Quality Testing have been conducted together on 02/06/2021-11/06/2021 during the monitoring team member visiting end-user' homes to take water quality samples for water Quality Testing, simultaneously the in-person survey including all the JMP core questions for drinking water and core questions for hygiene have been conducted by monitoring team member and via checking the filled questionnaires of JMP/15/ and the photos of in-person survey/24/, it is confirmed that the Water hygiene education campaign sampling monitoring has been conducted in line with the PDD and methodology.

$M_{q,y}$

$M_{q,y}$ values were tested in the laboratory during this monitoring period. Ongoing water quality indicated as the fraction of the samples that pass microbial quality standard requirements specified in relevant microbial quality standard for drinking water of the host country which is confirmed in line with the methodology requirement, the standard is determined as KS EAS 153: 2018 East African Standard Specification for Packaged Drinking Water/40/ which is verified as applicable to the host country.

Testing of the water that exits the treatment technology for the project activity due to the HWT applied, and the test of samplings determines the proportion of pass and fail results.

PD has determined a sample size of 101 for survey of Water Hygiene Education Campaigns which is in line with the PDD and approach as defined in the Table 3 of Annex 4 of *TPDDTEC* (Version 3.1)/38/. Via checking the records of randomly selected samples/14/, it is verified that PD has randomly selected the 101 samples from 467,123 water purifiers users using MS Excel software at the beginning of 2021.

Via checking the sample information table/13/, it is confirmed that hygiene education campaigns, and Water Quality Testing have been conducted together on 02/06/2021-11/06/2021 during the monitoring team member visiting end-user' homes to take water quality samples for water Quality Testing. Hence, it is

confirmed that the testing have been conducted by annually sampling, and the first round of testing has been conducted at least after six months from the start date.

The field testing kits were used by monitoring member fill a numbered sterilized sampling bottle with water from outlet of the water purifier and then stored at low temperature (0~4°C) and protected from light to avoid contamination, then the samples were sent to laboratory for water quality monitoring and analysis immediately after taken, which has been verified by checking the photos of sampling process/24/.

Via checking the laboratory water quality test reports/16/, it is confirmed that all the 101 samples have been analyzed in line with the standard of KS EAS 153: 2018 East African Standard Specification for Packaged Drinking Water/40/.

Via checking the laboratory water quality test reports/16/, it is confirmed that the lab is a qualified third-party affiliated with the Kenya Bureau of Standards (KEBS) and thus confirmed as in compliance with requirement of the laboratory defined in the PDD as per the applied methodology.

The Water quality testing during this monitoring period is verified as in line with the requirements of applied methodology/37/ and the PDD.

$HN_{p,y}$

The project survey (PS) is conducted with end-user representative of the project scenario target population and currently using the safe water project technology. The Project Survey and the WCFT have been conducted concurrently using the same sample which is confirmed in line with the PDD.

The project survey has been carried out using representative and random sampling following the GS guidelines for minimum sample size 100 due to the number of units sold was greater than 1,000. PD has determined a sample size of 101 for project survey which is in line with the PDD. Via checking the records of randomly selected samples/14/, it is verified that PD has randomly selected the 101 samples from 467,123 water purifiers users using MS Excel software at the beginning of 2021.

End users for the project survey have been selected using representative sampling techniques to ensure adequate representation of users with technologies of different ages. For this monitoring period, via checking the database of sales records/12/, it is confirmed that since the project started, all the 467,123 water purifiers finished sale within two months, hence, it is verified that all water purifiers involved in this monitoring period have the same age.

Via checking the questionnaires of project survey/17/, it is confirmed that the monitoring team member conducted the in-person paper survey on 18/01/2021-28/01/2021 and all the 101 sampled end-users filled the questionnaires with end user basic characteristics, family size, technology use, fuel consumption and seasonal variations, etc.

Via checking the project survey summary table which was completed based on the original filled questionnaires of project survey/17/, it is verified that the value of $HN_{p,y}$ is correct for this monitoring period.

$X_{cleanboil,y}$

The Project Survey and the WCFT have been conducted concurrently using the same sample which is confirmed in line with the PDD.

The project survey has been carried out using representative and random sampling following the GS guidelines for minimum sample size 100 due to the number of units sold was greater than 1,000. PD has determined a sample size of 101 for project survey which is in line with the PDD. Via checking the records of randomly selected samples/14/, it is verified that PD has randomly selected the 101 samples from 467,123 water purifiers users using MS Excel software at the beginning of 2021.

End users for the project survey have been selected using representative sampling techniques to ensure adequate representation of users with technologies of different ages. For this monitoring period, via checking the database of sales records/12/, it is confirmed that since the project started, all the 467,123 water purifiers finished sale within two months, hence, it is verified that all water purifiers involved in this monitoring period have the same age.

Via checking the questionnaires of project survey/17/, it is confirmed that the monitoring team member conducted the in-person paper survey on 18/01/2021-28/01/2021 and all the 101 sampled end-users filled the questionnaires with end user basic characteristics, family size, technology use, fuel consumption and seasonal variations, etc.

Via checking the project survey summary table/18/ which was completed based on the original filled questionnaires of project survey/17/, it is verified that the value of $X_{cleanboil,y}$ is correct for this monitoring period.

QPW_p

Water Consumption Field Test (WCFT) have been conducted concurrently using the same sample with project survey.

PD has determined a sample size of 101 for WCFT which is in line with the 0.6 Coefficient of Variation (COV) under a 90/10 approach as defined in the Table 3 of Annex 4 of *TPDDTEC* (Version 3.1)/38/ as defined in PDD. Via checking the records of randomly selected samples/14/, it is verified that PD has randomly selected the 101 samples from 467,123 water purifiers users using MS Excel software at the beginning of 2021.

End users for the WCFT have been selected using representative sampling techniques to ensure adequate representation of users with technologies of different ages. For this monitoring period, via checking the database of sales records/12/, it is confirmed that since the project started, all the 467,123 water purifiers finished sale within two months, hence, it is verified that all water purifiers involved in this monitoring period have the same age.

Via checking the Survey record form of WCFT/19/, it is confirmed that the monitoring activity of this parameter was completed successively on 18/01/2021 to 21/01/2021 and 25/01/2021 to 28/01/2021, which is not the weekends and holidays. The monitoring activity lasted 4 days and was completed in two weeks. The monitoring team member recorded the start time and end time of the sample user's water use daily. Hence it is confirmed that the WCFT was conducted in line with the PDD and methodology.

Via checking the WCFT summary table/20/ which was completed based on the original filled Survey record form of WCFT/19/, it is verified that the sum each water consumption record can get the daily water consumption, and the mean value of the total water consumption (the total water consumption per day aggregated over a three-day period) establish the value QPW_p per end user, and the value of QPW_p is verified as correct for this monitoring period.

 $U_{p,y}$

Usage survey (US) has been conducted for determine the value of $U_{p,y}$.

PD has determined a sample size of 100 for US which is in line with the sample size determination for usage survey in PDD (minimum total sample size for Usage Survey is 100, with at least 30 samples for project technologies of each age being credited) and is also in line with the methodology requirement/37/. End users for the WCFT have been selected using representative sampling techniques to ensure adequate representation of users with technologies of different ages. For this monitoring period, via checking the database of sales records/12/, it is confirmed that since the project started, all the 467,123 water purifiers finished sale within two months, hence, it is verified that all water purifiers involved in this monitoring period have the same age.

Via checking the records of randomly selected samples/14/, it is verified that PD has randomly selected the 100 samples from 467,123 water purifiers users using MS Excel software at the beginning of 2021.

Via checking the questionnaires of US/21/, it is confirmed that the US was completed successively on 01/02/2021. The questionnaire is checked as contain the six topics which is confirmed in line with Annex 1 of applied methodology.

Via checking the US summary table/22/ which was completed based on the original filled questionnaires of US/21/, it is verified that based on the completion of six topics questionnaires and the survey of Topic 2, the usage rate of the water purifier in this monitoring period is correct and verifiable.

Via checking the sampling method as stated in MR, CTI verified that the method is in line with methodology requirement/37/ and PDD and based on checking all the sampling records, CTI confirmed that the sampling monitoring survey results are reasonable for determine the monitored parameters for this monitoring period.

In order to focus on if the chosen sampling approach is adequate and acceptable, VVB conducted a sampling approach during on-site, details are stated in following section.

Sampling approach by VVB

CTI conducted the verification of sampling results with the following steps according to "Sampling and Surveys for CDM Project Activities and Programme of Activities" version 08.0/32/ and "Guideline of Sampling and surveys for CDM project activities and programmes of activities" version 04.0/31/:

For parameter ***Number of water purifiers sold in year y***, to verify the accuracy and correctness of monitored data, verification team has utilized sampling approach as per the "Guideline of Sampling and

surveys for CDM project activities and programmes of activities” version 04.0/31/, this sampling approach found to be appropriate as the purchase receipts are homogenous.

As per the paragraph 12 of 2.1.1 section of the guideline states that the Sample size calculation by Simple Random Sampling can be done using following formulae:

$$n \geq \frac{1.645^2 N \times p(1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.645^2 p(1-p)}$$

Where

- n Sample size
- N Total number of purchase receipts
- P Our expected proportion
- 1.645 Represents the 90% confidence required
- 0.1 Represents the 10% relative precision ($0.1 \times 0.5 = 0.05 = 5\%$ points either side of p)

N is 467,123 as determined in the database of sales record/12/, P is determined as 90%, as per the level of confidence, VVB expects that 90% of the samples taken shall comply with the project requirements.

Hence the n is calculated as $1.645^2 \times 467,123 \times 0.9 \times (1-0.9) / \{((467,123-1) \times 0.1^2 \times 0.9^2 + 1.645^2 \times 0.9 \times (1-0.9))\} = 31$. Hence, the verification team randomly selected 50 water purifier reference numbers from the database of sales record/12/ and checked related purchase receipts/11/ which is more than 31 sample size requirement during this monitoring period, the receipts are cross checked with the database of sales record/12/, it is verified that the database of sales record during this monitoring period is correct with the purchase receipts sample. Hence, it is concluded that the value of **Number of water purifiers sold in year y** during this monitoring period of 467,123 is correct and credible.

For parameter $M_{q,y}$, to verify the accuracy and correctness of monitored data, verification team has checked all the samples from PP original data, so 101 water quality test report/16/ were checked by verification team and it is verified that all the 101 Water Quality test results are consistent with the PP data and final calculation result of 100% is verified as correct and credible based on the sample results conducted on annually base and meet the requirements of at least after six months from the start date.

For parameters **Water hygiene education campaigns**, $HN_{p,y}$, $X_{cleanboil,y}$, QPW_p , $U_{p,y}$ using sampling method listed in above, verification team made the sampling plan for interview end user samples selected from monitoring sampling survey during the remote verification using Simple random Sampling approach as specified in the “Sampling and Surveys for CDM Project Activities and Programme of Activities” version 08.0/32/ with the following steps,

(a) Take a random sample of the project’s sample records;

In order to determine the size of the sample household for remote validation interview check, the acceptable quality level (AQL), i.e. the proportion discrepancies between the PP sample records and the VVB sample records that are acceptable is determined as 0.5% and the proportion of discrepancies between the PP sample records and VVB sample records that are unacceptable (UQL) is determined as 10% according to “Sampling and Surveys for CDM Project Activities and Programme of Activities” version 08.0/32/.

The maximum errors associated with the determination indicated above should remain at levels indicated below as per “Sampling and Surveys for CDM Project Activities and Programme of Activities”/32/:

- (1) A 10% chance that the VVB will wrongly reject the PPs records (producer’s risk);
- (2) A 10% chance that the VVB will wrongly accept the PPs records (consumer’s risk).

With the AQL of 0.5%, the UQL of 10%, the producer’s risk of 10% and the consumer’s risk of 10%, the size of the acceptance sampling is determined as 38 and the acceptance number is determined as 1 according to Table 1 of “Sampling and Surveys for CDM Project Activities and Programme of Activities”/32/. To be more conservative, verification team randomly selected 40 from the PD sample records for different sampling survey as below,

1. PS&WCFT-randomly selected 40 from 101 PD samples
2. Water hygiene education campaigns (JMP survey) - randomly selected 40 from 101 PD samples
3. US - randomly selected 40 from 100 PD samples

Took a random sample selection of the PD sample records as assessed above using the excel function, and Local experts conducted the site visit of the total 120 end-users sampled by the verifier and filling the questionnaires/58/. Refer to section D.3 for the questions listed in the questionnaires.

(b) Check the acceptability of the data for each record in the sample records based on the expertise;

The answers in the questionnaires/58/ filled by 120 samples selected by CTI is found to be consistent with the sample records in the PD monitoring sample records and questionnaires. Also, no discrepancy is found between the PD monitoring sample records and the VVB sample records/58/.

(c) Based on the number of records where is agreement, determine if the sample records meet the requirements.

As there are no discrepant records, i.e. the discrepant record is less than the acceptance number of 1, the PD monitoring sample records for PS, WCFT, US and JMP survey for this monitoring period is accepted as per "Sampling and Surveys for CDM Project Activities and Programme of Activities"/32/.

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 Description of Project	-	CAR 01 CAR 02	-
Remaining forward action requests from validation and/or previous verification	-	-	-
Compliance of the project implementation with the registered project design document	-	-	-
Post-registration changes	-	-	-
Compliance of the monitoring system applied by the project with the registered monitoring plan	CL 01 CL 02 CL 03	-	-
Compliance of monitoring activities with the registered monitoring plan			
SDG Data and parameters fixed ex ante or at renewal of crediting period	CL 04 CL 05	-	-
SDG Data and parameters monitored	CL 06 CL 07	CAR 03 CAR 04	-
Comparison of monitored parameters with last monitoring period	-	-	-
Compliance of the sampling implementation with the registered sampling plan	-	-	-
Assessment of data and calculation of SDG Impacts			
Calculation of baseline value or estimation of baseline situation of each SDG Impact	-	CAR 05	-
Calculation of project value or estimation of project situation of each SDG Impact	-	CAR 06	-
Calculation of leakage	-	CAR 07	-
Calculation of net benefits or direct calculation for each SDG Impact	-	-	-
Comparison of actual SDG Impacts with estimates in approved PDD	-	-	-
Remarks on increase in achieved SDG Impacts from estimated value in approved PDD	CL 08	-	-
Safeguards reporting	-	-	-
Stakeholder inputs and legal disputes	-	-	-
Others (please specify)	-	-	FAR 01 FAR 02 FAR 03
Total	8	7	3

SECTION E. Verification findings

E.1. General Description of Project

Means of verification	<p>A draft monitoring report was submitted to the verification team by the project participants prior to the start of the verification activities.</p> <p>It is checked that the appropriate form has been used for compiling the MR as per the Gold Standard for Global Goals Monitoring Report Template version 1.1 in October 2020/48/.</p> <p>Further every section has been checked against the GS4GG Principles& Requirements/49/.</p> <p>Via remote verification, CTI confirmed that the project is to sale of Multi-Layer water purifiers as a way to provide safe drinking water for households in Makueni County, Trans Nzoia County, Kirinyaga County, Bungoma County and Nakuru County of Kenya.</p> <p>The Multi-Layer water purifiers is a way to provide safe drinking water for households to simply pour untreated water into the water purifier. The project introduces zero-energy water filtration technology for local households, which belongs to household water treatment technologies (HWT). The water filtration system requires no energy input or consumables. It's a kind of gravity household water purifiers.</p> <p>Via checking the technical specification of Multi-Layer water purifiers, CTI confirmed that the capacity of the water purifiers is to purify 3 liters of water per hour with a 15-year lifespan, the project technology can provide enough water to meet and exceed the World Health Organization recommended domestic water consumption of 7.5 liters per capita per day/41/.</p> <p>For this monitoring period, 467,123 units have been sold verified by checking the database of sales record/12/, with actual Emissions Reduction for the current monitoring period from 10/10/2020 to 31/07/2021 is 282,570 tCO₂e. The project is implemented in line with the PDD confirmed by remote verification.</p> <p>The information presented in the MR on the technical design is consistent with the actual implementation of the project activity and PDD as confirmed through checking the Multi-Layer water purifiers purchase contract/9/ and technical specification of Multi-Layer water purifiers/10/. Via checking the technical specification of Multi-Layer water purifiers/10/, CTI confirmed that the capacity of the water purifiers is to purify 3 liters of water per hour with a 15-year lifespan. And the dome ceramic, carbon cartridge and mineral stone should be changed when purify every 10,000 L water. Each purifier consists of 8 step filtration system and whole set of the alternative dome ceramic, carbon cartridge and mineral stone will be supplied to the end-users together with the water purifiers.</p> <p>The project is applicable to the GS approved "Methodology for Emission Reductions from Safe Drinking Water Supply" (Version 1.0)/37/.</p> <p>The location of the project activity is in Makueni County, Trans Nzoia County, Kirinyaga County, Bungoma County and Nakuru County of Republic of Kenya Republic of Kenya.</p> <p>The detailed geographic coordinates of the project included in this monitoring period is listed as below:</p> <table border="1"> <thead> <tr> <th>No.</th><th>Project Location</th></tr> </thead> <tbody> <tr> <td>Host Country</td><td>Republic of Kenya</td></tr> <tr> <td>Region:</td><td>Makueni County, Trans Nzoia County, Kirinyaga County, Bungoma County and Nakuru County</td></tr> <tr> <td>Latitude and Longitude of central point:</td><td>Makueni County (1°48'S and 37°37'E), Trans Nzoia County (1°6'N and 34°57'E), Kirinyaga County (0°30'S and 37°17'E), Bungoma County (0°34'S and 34°34'E) and Nakuru County (0°18'S and 36°4'E) of Kenya (Kenya has a latitude of 0.0236° S, and longitude of 37.9062° E)</td></tr> </tbody> </table>	No.	Project Location	Host Country	Republic of Kenya	Region:	Makueni County, Trans Nzoia County, Kirinyaga County, Bungoma County and Nakuru County	Latitude and Longitude of central point:	Makueni County (1°48'S and 37°37'E), Trans Nzoia County (1°6'N and 34°57'E), Kirinyaga County (0°30'S and 37°17'E), Bungoma County (0°34'S and 34°34'E) and Nakuru County (0°18'S and 36°4'E) of Kenya (Kenya has a latitude of 0.0236° S, and longitude of 37.9062° E)
No.	Project Location								
Host Country	Republic of Kenya								
Region:	Makueni County, Trans Nzoia County, Kirinyaga County, Bungoma County and Nakuru County								
Latitude and Longitude of central point:	Makueni County (1°48'S and 37°37'E), Trans Nzoia County (1°6'N and 34°57'E), Kirinyaga County (0°30'S and 37°17'E), Bungoma County (0°34'S and 34°34'E) and Nakuru County (0°18'S and 36°4'E) of Kenya (Kenya has a latitude of 0.0236° S, and longitude of 37.9062° E)								

	<p>The project location has been clearly provided in section A.2 of the MR, which has been verified by google earth and the detailed coordinates have been provided for each county respectively which have also been verified by google earth and the information is correct.</p> <p>The project started sale water purifiers on 09/10/2020 which has been confirmed in the PDD and validation report/3/,4/. The project was applied as a GS-VER project with the GS Reference number of GS11207. According to the PDD and validation report/3/,4/, the project participant has adopted for the renewable crediting period of 15 years with the start date of 1st crediting period of 10/10/2020 and ended on 09/10/2025. The first monitoring period is from 10/10/2020 to 31/07/2021 (first and last days included) belongs to the first crediting period.</p> <p>As part of the site visit the Verification Team was able to confirm that the project description in MR is in accordance with the project description contained in the PDD/3/.</p>
Findings	<p>CAR 01, CAR 02 were raised and resolved.</p> <p>Refer to Appendix 4 in this report for detail assessment.</p>
Conclusion	<p>It can be confirmed that the final version Monitoring report/1/ is complete and transparent and in accordance with the PDD/3/ and Global Goals Monitoring Report Template version 1.1 in October 2020/48/.</p> <p>Refer to the below sections for details.</p>

E.2. Remaining forward action requests from validation and/or previous verification

This is the 1st verification of the project activity. Via checking the validation report/4/, CTI verified that there were three FARs raised. Refer to table 1 of Appendix 4 for the detail assessment of each FAR.

E.3. Compliance of the project implementation with the registered project design document

Means of verification	<p>By means of an in-depth review of the PDD and the checks carried out during the remote verification, an assessment has been carried out whether the project has been implemented and operated in line with the PDD and whether all physical features of the project are in place. The following has been checked: implemented technology, project equipment as well as monitoring equipment.</p> <p>The verification team has performed a conference call with PD, project owner and local experts conducted site visits with end users, in addition by all the provided evidence, it is found that the project has been put into operation and water purifiers are being sold and it is found that the implementation of the project activity is in accordance with the PDD. The changes in the factors and parameters used during this monitoring period to arrive at the emission reduction calculations are transparently described in the Monitoring Report. PD has provided justifications for the changes and these changes are accounted correctly while calculating emission reductions/ER/. Hydrologic Social Enterprise Ltd. has so far sold 467,123 units of water purifiers in five different counties of host country during this monitoring period, which is verified by checking the database of sales record/12/.</p> <p>The details of verification against changes incorporated by PP during this monitoring period are provided in the respective sections and there is no significant change observed in the project operation comparing with the PDD. This is the 1st monitoring period of 1st crediting period and the verification team herewith confirms that the project implementation is consistent since the project started as mentioned in the PDD. There are no major obstructions or gaps noted during this monitoring period.</p> <p>The actual sold and operation are found in accordance with the descriptions provided in the PDD. There is no deviation / change evidenced during this monitoring period and there were no delays compared to information in approved project.</p>
Findings	N/A
Conclusion	<p>Assessment concludes the following:</p> <ul style="list-style-type: none"> - The implementation status of project activity was found to in compliance with

	<p>PDD/3/.</p> <ul style="list-style-type: none"> - CTI has conducted the remote verification to confirm the implementation status of the project with regards to the realized technology. - The actual operation of project activity was found to in compliance with PDD/3/. - There were no delays compared to information in approved project.
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E.4. Post-registration changes

E.4.1. Temporary deviations from Certified Key Project Information, Project Design Document, Monitoring & Reporting Plan, applied methodology or applied standardized baseline

Not Applicable

E.4.2. Corrections

Not Applicable

E.4.3. Changes to start date of crediting period

Not Applicable

E.4.4. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline

Not Applicable

E.4.5. Changes to project design of approved project

Not Applicable

E.5. Compliance of the monitoring system applied by the project with the registered monitoring plan

Means of verification	<p>By means of comparison of the MR with the applied methodology and all applicable GS4GG guidelines, the verification team has checked whether the monitoring system is in compliance with the monitoring plan/3/ and related requirements of the applied methodology/37/ whether the sample plan conducted accordingly, the source and the applied value of the SDG monitored parameter is acceptable; whether the parameters monitored explain the operational and management structure, responsibilities and institutional arrangement for data collection/archiving, QA/QC procedures.</p> <p>The monitoring system applied by the project compliance with the registered monitoring plan is demonstrated as below:</p> <p>Monitoring for SDG parameters</p> <p>(1) Water hygiene education campaigns.</p> <p>(2) Number of water purifiers sold in year y.</p> <p>(3) Ongoing water quality indicated as the fraction of the samples that pass microbial quality standard requirements specified in relevant microbial quality standard for drinking water of the host country (KS EAS 153: 2018 East African Standard Specification for Packaged Drinking Water), $M_{q,y}$;</p> <p>(4) Number of individuals per premises type p in the project boundary in year y, $HN_{p,y}$;</p> <p>(5) Accumulated number of premises type p with at least one individual project technology in year y, $N_{p,y}$.</p>
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- (6) Average days the project technology is present for end-users in the premises p in year y , $DP_{p,y}$.
- (7) Usage rate of the project technology by premises type p during year y , $U_{p,y}$.
- (8) Volume of drinking water per person per day for premises type p , QPW_p .
- (9) Average number of individual project technologies in each project premises type p in year y , $DN_{p,y}$.
- (10) Usage time of the project technology by premises type p in year y , $t_{p,y}$.
- (11) Proportion of project households that boil safe (treated, or from safe supply) water after installation of project technology in year y , $X_{cleanboil,y}$.
- (12) Leakage emissions during year y , LE_y .
- (13) Number of males and females employed.
- (14) Percentage of employees with salaries paid at par with the average wage of Kenya.

CTI confirmed that all the monitoring parameters listed in the PDD have been provided in the MR corresponding to each SDG impact.

The Sampling methods have been used for determine some monitored parameters, refer to section D.4 for detail assessment of the sampling methods conducted by PD and VVB.

Refer to below section E.6.2 for detail assessment of the monitoring parameters.

Monitoring framework

The MR contains a diagram illustrating the Organization Structure of the Monitoring Team to be implemented by the project owner in order to implement the project activity which is confirmed consistent with the PDD. The GS monitoring team are responsible for the monitoring of all the parameters monitored for this monitoring period. And all the data was reviewed by the PD. The organizational structure is considered sufficient to fulfil the monitoring requirements of the methodology and ensure that emission reductions verified for this monitoring period.

Sales Record and Project Database

PD has created and maintained the database of sales record along with the water purifiers sold. The related information of water purifiers and end-users is included in the database which has been confirmed by checking the database of sales record/12/. It is verified that **467,123** end user's information is recorded and complete for the end user pool to which random sampling can be applied. Sales have been achieved as below channels.

Via checking the Company Registration Certificate, it is confirmed that the company was approved by national government and is a private limited company, although there is no public official website for this company, but via checking the public website of funder Rotor Energy Technology Corporation Limited/62/, it is confirmed that the Climate Neutral is a joint venture founded by Rotor Energy Technology Corporation Limited and Tal Holding Limited, aims to provide safe drinking water and clean energy solutions in Africa, this has been clearly shown in the website and thus the company is confirmed as a legal party.

For the sales of purifiers of the project, the sales model has been conducted by TRIOPT AFRICA LIMITED in different areas and each county established a sales management center to be responsible for statistics and analysis of sales in each county. And due to a sale contract was signed when a purifier sold each time, so the sales management center can pick up the sales contract and summarizes the information of end users on the contracts weekly and sorts out them into an excel spreadsheet, finally the GS monitoring team collects the excel spreadsheet monthly and generates the Database of Sales Record and cross-checked with the signed contract so that to do the sales management correctly.

Quality Assurance and Quality Control

The related QA/QC procedure has been conducted by PD for the monitoring process including data verification and cross check by monitoring team and project owner which has been verified by checking the monitoring plan and training records/30/.

CTI confirmed that the QA/QC procedure has been implemented by PD properly

	<p>during this monitoring period and the data management is confirmed as effective.</p> <p>Training:</p> <p>Trainings related to monitoring have been provided to relevant personnel before the project operated so that all the monitoring team members are competent for the monitoring work which is verified by checking the training records/30/.</p> <p>Non-Double counting assessment</p> <p>The VVB has checked for double counting by reviewing all relevant registries including CDM/56/, VCS/57/ and other GHGs programs such as EU ETS, IREC or subnational, various regional schemes such as the Canadian and American provincial/state-based schemes. CTI confirmed that there is no potential exists for Double Counting of emissions reductions due to issuance of Gold Standard VERs/CO₂-certificates from the considered project activity for this monitoring period.</p> <p>Furthermore, for the project users and water purifiers number sold management, to avoid the double counting, PP has implemented the related actions as following,</p> <ol style="list-style-type: none"> In order to cover more households with high-quality water purifiers at a lower price, it is restricted in the project that each household can only buy one set of water purifier and the project owner has arranged relevant personnel to conduct irregular surveys on the use of the water purifier. For this monitoring period, via checking the database of sales records/12/, it is verified that each water purifier sold has a unique number with a unique naming rule and each water purifier only corresponding to one user with unique name and phone number. Hence, it is verified that only one water purifier per household is considered in the emission reduction calculation and only calculated once for this monitoring period. Project Owner has added a serial number to all water filters sold and kept the numbers in the database of sales records/12/; Verifier checked the database of sales records/12/, it is found that no duplication of the serial number to all water filters. Furthermore, through checking the photos of the water purifiers/23/, the verification team found that all sampled water filters have a unique serial number attached to the body of devices. Other types of water purifiers will not be counted into the project due to these water purifiers will not have a unique serial number that complies with the naming rule developed by PD. Via checking the database of sales records/12/ against the ER calculation sheet/ER/, it is confirmed that only water purifiers sold from project owner are accounted, no risk of counting other brand into the ER sheet. <p>Finally, via checking the Declaration of No Double Counting Statement/NDC/ signed by project owner, it is confirmed that the emission reductions will not be double counted.</p> <p>In conclusion, CTI verified that Project Developer has provided Gold Standard with satisfactory justification that no double counting of emission reductions occurred for this monitoring period.</p> <p>In conclusion, the monitoring system is completely in accordance with the approved methodology applied by the GS project and PDD.</p>
Findings	<p>CL 01, CL 02 and CL 03 were raised and resolved.</p> <p>Refer to Appendix 4 in this report for detail assessment.</p>
Conclusion	<p>The monitoring system complies with the applied methodology and the monitoring plan and all applied procedures are completely in compliance to the latest approved monitoring plan and the methodology.</p>

E.6. Compliance of monitoring activities with the registered monitoring plan

E.6.1. SDG Data and parameters fixed ex ante or at renewal of crediting period

Means of verification	The values of ex-ante parameter assessed in the table given below:			
	Ex Ante Data and Parameters			
	Parameters	Value	Reference	Assessment by VT
	Project technology description SDWS 2 –	<p>The Multi-Layer water purifiers are produced by Zhejiang Duanqi Renewable Energy Co., Ltd., which consist of 8 step filtration system and can purify water 3 liter/hour. The lifespan of the water purifiers are over 15 years and the dome ceramic, carbon cartridge and mineral stone should be changed when purify every 10,000 L water. The project equipment provides safe drinking water that are free from pathogens and elevated levels of toxic substances. In addition, the water purifier involved in this project obtain the pre-export verification of conformity by KEBS (Kenya bureau of standards). Moreover, according to the water quality test report by the KEBS, the purified water quality of the product meets the standards of KS EAS 153: 2018 East African Standard Specification for</p>	<p>Technical specification of Multi-Layer water purifiers/10/ and Water quality test reports/16/ by accredited laboratory in year 2021</p>	<p>Confirmed as correct and in line with PDD.</p>

		Packaged Drinking Water.		
	Regulatory framework for safe water supply –SDWS 4	The government has issued some water resources related policies and regulations.	Water Act 2016/42/ National Water Quality Management Strategy/43/ Kenya National Water Master Plan 2030/44/	Confirmed as correct and in line with PDD.
	Water sources in the project boundary – SDWS 5	0.59% - piped water. 6.7% - water from boreholes or protected wells 92.7% - unimproved sources of drinking water	The value is determined by baseline study/26/ conducted from 10/10/2020 to 20/12/2020 which is confirmed no more than 3 years old when the validation conducted.	Confirmed as correct and in line with PDD.
	Stove technologies used in the project boundary –SDWS 6	Three-stone stoves -67.2%, Conventional stoves-19.3%, Improved stoves-6.3%, LPG stoves - 7.2% The project is implemented in Makueni, Trans Nzoia, Kirinyaga, Bungoma and Nakuru Counties of Kenya, the proportion of different stove types are defined for each county.	The value is determined by baseline study/26/ conducted from 10/10/2020 to 20/12/2020 which is confirmed no more than 3 years old when the validation conducted.	Confirmed as correct and in line with PDD.
	Expected technical life of project technology – SDWS 7	Operational lifespan of the water purifiers are more than 15 years	Technical specification of Multi-Layer water purifiers/10/	Confirmed as correct and in line with PDD.
	Xfirewood/Xcharcoal/XLPG – SDWS 8 Percentage of firewood, charcoal and LPG	Refer to MR and ER sheet	The value is determined by baseline study/26/ conducted from 10/10/2020 to 20/12/2020 which is confirmed no more than 3 years old when the validation conducted. Cross-check with Water Survey Report approved	Confirmed as correct and in line with PDD.

			by National Environment Management Authority/45/ from 01/06/2020 to 30/09/2020 which is verified belongs to the source “credible published literature for project region” according to the PDD	
	<i>EF_{b,firewood,CO2} – SDWS 9</i> <i>CO₂ emissions factor of the fuel (firewood) that it substituted or reduced</i>	112 tCO ₂ /TJ	IPCC 2006 default value/34/ as defined in the applied methodology/37/	Confirmed as correct and in line with PDD and IPCC/34/.
	<i>EF_{b,charcoal,CO2} – SDWS 9</i> <i>CO₂ emissions factor of the fuel (firewood) that it substituted or reduced</i>	165.22 tCO ₂ /TJ (includes charcoal production emissions)	IPCC 2006 default value/34/ as defined in the applied methodology/37/	Confirmed as correct and in line with PDD and IPCC/34/.
	<i>EF_{b,LFG,CO2} – SDWS 9</i> <i>CO₂ emissions factor of the fuel (charcoal) that it substituted or reduced</i>	63.1 tCO ₂ /TJ	The value is default from IPCC AR5/35/	Confirmed as correct and in line with PDD and IPCC/35/.
	<i>EF_{b,firewood,nonCO2} – SDWS 10</i> <i>Non CO₂ emissions factor of the firewood that is substituted or reduced</i>	9.46 t/TJ	The value is default derived from IPCC AR5/35/ as defined in the applied methodology/37/	Confirmed as correct and in line with PDD and IPCC/35/.
	<i>EF_{b,charcoal,nonCO2} – SDWS 10</i> <i>Non CO₂ emissions factor of the Charcoal that is substituted or reduced</i>	44.83 t/TJ (includes production emissions of CH ₄ and N ₂ O)	The value is default derived from IPCC AR5/35/ as defined in the applied methodology/37/	Confirmed as correct and in line with PDD and IPCC/35/.
	<i>EF_{b,LPG,nonCO2} – SDWS 10</i> <i>Non CO₂ emissions factor of the LPG that is substituted or reduced</i>	0.1665 t/TJ	The value is default from IPCC AR5/35/	Confirmed as correct and in line with PDD and IPCC/35/.

	<p>η_{wb}– SDWS 11 Weighted average efficiency of the baseline water boiling. Calculate the weighted average of the water boiling efficiency in the project boundary using the proportion of different stove types used and the stove efficiencies.</p>	Refer to MR and ER sheet	<p>The value is determined by baseline study/26/. 505 households participated the baseline survey (101 households for each County) in line with the requirement of the applied methodology.</p>	Confirmed as correct and in line with PDD.
	<p>C_b– SDWS 12 Proportion of project households who in the baseline were already using a safe water supply that did not require boiling</p>	20%	<p>The value is determined by baseline study/26/. 505 households participated the baseline survey (101 households for each County) in line with the requirement of the applied methodology.</p> <p>The percentage of households who are available of safe drinking water before project activity is 7.3% (37HH/505HH). 78.4% (396HH/505HH) treat unsafe water before drinking and 14.3% (72HH/505HH) drink unsafe water directly without any treatment. Among those who treat water, 83.8% (332HH/396HH) of them boil water before drinking and 16.2% (64HH/396HH) use gravity household water filters, ultraviolet</p>	Confirmed as correct and in line with PDD.

			radiation treatment, reverse osmosis, chlorine tablets and other technologies. Therefore, C_b can be calculated as $7.3\%+78.4\%*16.2\%=20.0\%$.	
	q_i – SDWS 13 Capacity of the household or institutional water treatment technology	3 Liters per hour	Technical specification of Multi-Layer water purifiers/10/	Confirmed as correct and in line with PDD.
	$f_{NRB,i,y}$ – SDWS21 Fractional non-renewability status of woody biomass fuel during year y, in case the baseline fuel is biomass or charcoal	66.4%	Determined by CDM Tool 30 Calculation of the fraction of non-renewable biomass (Version 03.0) /33/	Confirmed as correct and in line with PDD and tool /33/.
The assessment team has checked that all the ex-ante parameters were fixed at the level of PA and were verified from the validated PDD/3/. Also, the ex-ante parameter values have been consistently applied for the ER calculation which is evident from the ER calculation sheet/2/.				
Findings	CL 04 and CL 05 were raised and resolved. Refer to Appendix 4 in this report for detail assessment.			
Conclusion	The values mentioned in the Monitoring Report/1/ and Emission Reduction Spreadsheet/2/ are consistent with the PDD/3/. The applied values are correct and justified.			

E.6.2. SDG Data and parameters monitored

Means of verification	1. Water hygiene education campaigns	
	Relevant SDG indicator:	Water quality
	Parameter ID	SDWS 20
	Data/Parameter	Water hygiene education campaigns
	Unit	N/A
	Description	Hygiene campaigns carried out among project technology users
	Value applied for this monitoring period	Refer to MR
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes /	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and applied methodology/37/.

	No)	
	Monitoring equipment with accuracy	N/A
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period?	N/A
	How were the values in the monitoring report verified?	<p>Water hygiene education campaign monitoring has been conducted concurrently using the same sample with Water Quality Testing which has been verified by checking the sample information table/13/ and this method is confirmed as in line with the PDD.</p> <p>PD has determined a sample size of 101 for survey of Water Hygiene Education Campaigns which is in line with the PDD and approach as defined in the Table 3 of Annex 4 of <i>TPDDTEC</i> (Version 3.1)/38/. Via checking the records of randomly selected samples/14/, it is verified that PD has randomly selected the 101 samples from 467,123 water purifiers users using MS Excel software at the beginning of 2021.</p> <p>Via checking the sample information table/13/, it is confirmed that hygiene education campaigns, and Water Quality Testing have been conducted together on 02/06/2021-11/06/2021 during the monitoring team member visiting end-user' homes to take water quality samples for water Quality Testing, simultaneously the in-person survey including all the JMP core questions for drinking water and core questions for hygiene have been conducted by monitoring team member and via checking the filled questionnaires of JMP/15/ and the photos of in-person survey/24/, it is confirmed that the Water hygiene education campaign sampling monitoring has been conducted in line with the PDD and methodology and the values applied in the monitoring report is verified as correct and reasonable.</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?	Yes, QA/QC procedures were found to be appropriate and reliable.
	2. Number of water purifiers sold in year y	
Relevant SDG:	SDG7	
Parameter ID	SDWS 19	
Data/Parameter	Number of water purifiers sold in year y	

	Unit	sets
	Description	Number of water purifiers sold in year y
	Value applied for this monitoring period	467,123
	Measuring /Reading /Recording frequency	Yearly
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and applied methodology/37/.
	Monitoring equipment with accuracy	N/A
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
	How were the values in the monitoring report verified?	<p><i>Number of water purifiers sold in year y</i> was derived from database of sales records/12/.</p> <p>By gathering and analyzing database of sales records /12/, the number of water purifiers sold during this monitoring period has been determined.</p> <p>Via checking the database of sales records/12/, CTI verified that the numbers can be checked and the values are consistent. It is verified that the sales only occurred in October and November 2020 for two months and no one sold in 2021.</p>
	If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Yes. The database of sales records/12/ is cross-checked with water purifiers' purchase receipts/11/. As assessed in the section D.4 of this report, CTI verified that all the data provided for cross-check are correct and reasonable.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.
	3. $M_{q,y}$	
	Relevant SDG:	SDG 6, 13
	Parameter ID	SDWS 18
	Data/Parameter	$M_{q,y}$
	Unit	%
	Description	Ongoing water quality indicated as the fraction of the

		samples that pass microbial quality standard requirements specified in relevant microbial quality standard for drinking water of the host country (KS EAS 153: 2018 East African Standard Specification for Packaged Drinking Water).
	Value applied for this monitoring period	100%
	Measuring /Reading /Recording frequency	Annual sampling, and the first round of testing shall be conducted at least after six months from the start date.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and applied methodology/37/.
	Monitoring equipment with accuracy	N/A
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
	How were the values in the monitoring report verified?	<p>$M_{q,y}$ values were tested in the laboratory during this monitoring period. Ongoing water quality indicated as the fraction of the samples that pass microbial quality standard requirements specified in relevant microbial quality standard for drinking water of the host country which is confirmed in line with the methodology requirement, the standard is determined as KS EAS 153: 2018 East African Standard Specification for Packaged Drinking Water/40/ which is verified as applicable to the host country.</p> <p>Testing of the water that exits the treatment technology for the project activity due to the HWT applied, and the test of samplings determines the proportion of pass and fail results.</p> <p>PD has determined a sample size of 101 for survey of Water Hygiene Education Campaigns which is in line with the PDD and approach as defined in the Table 3 of Annex 4 of TPDDTEC (Version 3.1)/38/. Via checking the records of randomly selected samples/14/, it is verified that PD has randomly selected the 101 samples from 467,123 water purifiers users using MS Excel software at the beginning of 2021.</p> <p>Via checking the sample information table/13/, it is confirmed that hygiene education campaigns, and Water Quality Testing have been conducted together on 02/06/2021-11/06/2021 during the monitoring team member visiting end-user' homes to take water quality samples for water Quality Testing. Hence, it is confirmed that the testing have been conducted by annually sampling, and the first round of testing has been conducted at least after six months from the start date.</p> <p>The field testing kits were used by monitoring member</p>

	<p>fill a numbered sterilized sampling bottle with water from outlet of the water purifier and then stored at low temperature (0~4℃) and protected from light to avoid contamination, then the samples were sent to laboratory for water quality monitoring and analysis immediately after taken, which has been verified by checking the photos of sampling process/24/.</p> <p>Via checking the laboratory water quality test reports/16/, it is confirmed that all the 101 samples have been analyzed in line with the standard of KS EAS 153: 2018 East African Standard Specification for Packaged Drinking Water/40/.</p> <p>Via checking the laboratory water quality test reports/16/, it is confirmed that the lab is a qualified third-party affiliated with the Kenya Bureau of Standards (KEBS) and thus confirmed as in compliance with requirement of the laboratory defined in the PDD as per the applied methodology.</p> <p>The value of water quality testing during this monitoring period is verified as in line with the laboratory water quality test reports/16/ and confirmed as correct and reasonable.</p>
If applicable, has the reported data been cross-checked with other available data? (Yes / No)	N/A
Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.
4. $HN_{p,y}$	
Relevant SDG:	SDG 6, 13
Parameter ID	SDWS 25
Data/Parameter	$HN_{p,y}$
Unit	Number
Description	Number of individuals per premises type p in the project boundary in year y
Value applied for this monitoring period	3.94
Measuring /Reading /Recording frequency	Annually
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and applied methodology/37/.

	Monitoring equipment with accuracy	N/A
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
	How were the values in the monitoring report verified?	<p>The value is monitored by project survey.</p> <p>The project survey (PS) is conducted with end-user representative of the project scenario target population and currently using the safe water project technology. The Project Survey and the WCFT have been conducted concurrently using the same sample which is confirmed in line with the PDD.</p> <p>The project survey has been carried out using representative and random sampling following the GS guidelines for minimum sample size 100 due to the number of units sold was greater than 1,000. PD has determined a sample size of 101 for project survey which is in line with the PDD. Via checking the records of randomly selected samples/14/, it is verified that PD has randomly selected the 101 samples from 467,123 water purifiers users using MS Excel software at the beginning of 2021.</p> <p>End users for the project survey have been selected using representative sampling techniques to ensure adequate representation of users with technologies of different ages. For this monitoring period, via checking the database of sales records/12/, it is confirmed that since the project started, all the 467,123 water purifiers finished sale within two months, hence, it is verified that all water purifiers involved in this monitoring period have the same age.</p> <p>Via checking the questionnaires of project survey/17/, it is confirmed that the monitoring team member conducted the in-person paper survey on 18/01/2021-28/01/2021 and all the 101 sampled end-users filled the questionnaires with end user basic characteristics, family size, technology use, fuel consumption and seasonal variations, etc.</p> <p>Via checking the project survey summary table which was completed based on the original filled questionnaires of project survey/17/, it is verified that the value of $HN_{P,y}$ is correct for this monitoring period.</p>
	If applicable, has the reported data been cross-checked with other available data? (Yes / No)	The monitoring value from PS is cross-checked with 2019 Kenya Population and Housing Census Volume I: Population by County and Sub-county/46/, it is confirmed that the value from PS is consistent with the official government publication.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.

	5. $N_{p,y}$	
	Relevant SDG:	SDG 6, 13
	Parameter ID	SDWS 28
	Data/Parameter	$N_{p,y}$
	Unit	Number
	Description	Accumulated number of premises type p with at least one individual project technology in year y
	Value applied for this monitoring period	Refer to MR
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and applied methodology/37/.
	Monitoring equipment with accuracy	N/A
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
	How were the values in the monitoring report verified?	<p>$N_{p,y}$ was derived from database of sales records/12/.</p> <p>By gathering and analyzing database of sales records /12/, the accumulated number of water purifiers during this monitoring period has been determined.</p> <p>Via checking the database of sales records/12/, CTI verified that the numbers can be checked and the values are consistent. It is verified that the sales only occurred in October and November 2020 for two months and no one sold in 2021.</p> <p>Units shall not be counted in $N_{d,y}$ after the end of their technical life, unless this is addressed by the measures to manage the cases where the expected technical life of the project technology is shorter than the crediting period.</p>
	If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Yes. The database of sales records/12/ is cross-checked with water purifiers' purchase receipts/11/. As assessed in the section D.4 of this report, CTI verified that all the data provided for cross-check are correct and reasonable.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in	Yes, QA/QC procedures were found to be appropriate and reliable.

	place?	
	6. $DP_{p,y}$	
	Relevant SDG:	SDG 6, 13
	Parameter ID	SDWS 31
	Data/Parameter	$DP_{p,y}$
	Unit	Days
	Description	Average days the project technology is present for end-users in the premises p in year y
	Value applied for this monitoring period	Refer to MR
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and applied methodology/37/.
	Monitoring equipment with accuracy	N/A
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
	How were the values in the monitoring report verified?	<p>$DP_{p,y}$ was derived from database of sales records/12/. Based on the records of "Date of sale" in database of sales records/12/, the number of present days for end user of each water purifier per month is determined. The specific calculation formula is:</p> <p>Sum up the present days for end user of each water purifier / the total number of water purifier.</p> <p>Furthermore, according to usage rate survey/22/, the purchase date of water purifier is the use date of the water purifier. However, for the calculation of emission reductions, the water purifiers are used on the second day of purchase has been considered which is verified as conservative.</p>
	If applicable, has the reported data been cross-checked with other available data? (Yes / No)	N/A
Does the data management ensure correct transfer of data and reporting of emission reductions	N/A	

	and are necessary QA/QC processes in place?	
	7. $U_{p,y}$	
	Relevant SDG:	SDG13
	Parameter ID	SDWS 29
	Data/Parameter	$U_{p,y}$
	Unit	%
	Description	Usage rate of the project technology by premises type p during year y
	Value applied for this monitoring period	89
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and applied methodology/37/.
	Monitoring equipment with accuracy	N/A
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
	How were the values in the monitoring report verified?	<p>Usage survey (US) has been conducted for determine the value of $U_{p,y}$.</p> <p>PD has determined a sample size of 100 for US which is in line with the sample size determination for usage survey in PDD (minimum total sample size for Usage Survey is 100, with at least 30 samples for project technologies of each age being credited) and is also in line with the methodology requirement/37/. End users for the WCFT have been selected using representative sampling techniques to ensure adequate representation of users with technologies of different ages. For this monitoring period, via checking the database of sales records/12/, it is confirmed that since the project started, all the 467,123 water purifiers finished sale within two months, hence, it is verified that all water purifiers involved in this monitoring period have the same age.</p> <p>Via checking the records of randomly selected samples/14/, it is verified that PD has randomly selected the 100 samples from 467,123 water purifiers users using MS Excel software at the beginning of 2021.</p> <p>Via checking the questionnaires of US/21/, it is confirmed that the US was completed successively on</p>

		<p>01/02/2021. The questionnaire is checked as contain the six topics which is confirmed in line with Annex 1 of applied methodology.</p> <p>Via checking the US summary table/22/ which was completed based on the original filled questionnaires of US/21/, it is verified that based on the completion of six topics questionnaires and the survey of Topic 2, the usage rate of the water purifier in this monitoring period is correct and verifiable.</p> <p>Via checking the sampling method as stated in MR, CTI verified that the method is in line with methodology requirement/37/ and PDD and based on checking all the sampling records, CTI confirmed that the sampling monitoring survey results are reasonable for determine the monitored parameters for this monitoring period and the value in MR is verified as correct.</p>
	If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Water Consumption Field Test (WCFT) is used to cross check the usage percentage. Via checking the WCFT/19/ results, CTI confirmed that the usage rate of the water purifier is 100%, hence the result of US summary table/22/ is confirmed as conservative.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.
8. QPW_p		
	Relevant SDG:	SDG13
	Parameter ID	SDWS 24
	Data/Parameter	QPW_p
	Unit	Liters/person/day
	Description	Volume of drinking water per person per day for premises type p
	Value applied for this monitoring period	4.3
	Measuring /Reading /Recording frequency	Every two years
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and applied methodology/37/.
	Monitoring equipment with accuracy	N/A
	Is the installed monitoring equipment has been duly	N/A

	calibrated for this entire monitoring period? (Yes / No)	
	How were the values in the monitoring report verified?	<p>Water Consumption Field Test (WCFT) have been conducted concurrently using the same sample with project survey.</p> <p>PD has determined a sample size of 101 for WCFT which is in line with the 0.6 Coefficient of Variation (COV) under a 90/10 approach as defined in the Table 3 of Annex 4 of <i>TPDDTEC</i> (Version 3.1)/38/ as defined in PDD. Via checking the records of randomly selected samples/14/, it is verified that PD has randomly selected the 101 samples from 467,123 water purifiers users using MS Excel software at the beginning of 2021.</p> <p>End users for the WCFT have been selected using representative sampling techniques to ensure adequate representation of users with technologies of different ages. For this monitoring period, via checking the database of sales records/12/, it is confirmed that since the project started, all the 467,123 water purifiers finished sale within two months, hence, it is verified that all water purifiers involved in this monitoring period have the same age.</p> <p>Via checking the Survey record form of WCFT/19/, it is confirmed that the monitoring activity of this parameter was completed successively on 18/01/2021 to 21/01/2021 and 25/01/2021 to 28/01/2021, which is not the weekends and holidays. The monitoring activity lasted 4 days and was completed in two weeks. The monitoring team member recorded the start time and end time of the sample user's water use daily. Hence it is confirmed that the WCFT was conducted in line with the PDD and methodology.</p> <p>Via checking the WCFT summary table/20/ which was completed based on the original filled Survey record form of WCFT/19/, it is verified that the sum each water consumption record can get the daily water consumption, and the mean value of the total water consumption (the total water consumption per day aggregated over a three-day period) establish the value QPW_p per end user, and the value of QPW_p is verified as correct for this monitoring period.</p>
	If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Yes. The value is capped at 5.5 L/person/day, which is determined based on WHO recommendations/who/.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.
9. $DN_{p,y}$		

	Relevant SDG:	SDG 13
	Parameter ID	SDWS 32
	Data/Parameter	$DN_{p,y}$
	Unit	Number
	Description	Average number of individual project technologies in each project premises type p in year y
	Value applied for this monitoring period	Each household can only buy one set of water purifier
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and applied methodology/37/.
	Monitoring equipment with accuracy	N/A
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
	How were the values in the monitoring report verified?	<p>$DN_{p,y}$ was derived from database of sales records/12/.</p> <p>By gathering and analyzing the “Quantity of project technologies sold” in database of sales records/12/ and identifying information of buyer/end user, the average number of project devices per household were calculated.</p> <p>In order to cover more households with high-quality water purifiers at a lower price, it is restricted in the project that each household can only buy one set of water purifier and the project owner has arranged relevant personnel to conduct irregular surveys on the use of the water purifier. For this monitoring period, via checking the database of sales records/12/, it is verified that each water purifier sold has a unique number with a unique naming rule and each water purifier only corresponding to one user with unique name and phone number. Hence, it is verified that only one water purifier per household is considered in the emission reduction calculation and only calculated once for this monitoring period.</p>
	If applicable, has the reported data been cross-checked with other available data? (Yes / No)	N/A
	Does the data management ensure correct transfer of	N/A

	data and reporting of emission reductions and are necessary QA/QC processes in place?	
	10. $t_{p,y}$	
	Relevant SDG:	SDG 13
	Parameter ID	SDWS 30
	Data/Parameter	$t_{p,y}$
	Unit	Hours per day
	Description	Usage time of the project technology by premises type p in year y
	Value applied for this monitoring period	5
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and applied methodology/37/.
	Monitoring equipment with accuracy	N/A
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
	How were the values in the monitoring report verified?	$t_{p,y}$ is selected by PP using the Option 3. Default of 5 hours from applied methodology/37/.
	If applicable, has the reported data been cross-checked with other available data? (Yes / No)	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
	11. $X_{cleanboil,y}$	
	Relevant SDG:	SDG13

	Parameter ID	SDWS 22
	Data/Parameter	$X_{cleanboil,y}$
	Unit	%
	Description	Proportion of project households that boil safe (treated, or from safe supply) water after installation of project technology in year y
	Value applied for this monitoring period	0
	Measuring /Reading /Recording frequency	Annually
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and applied methodology/37/.
	Monitoring equipment with accuracy	N/A
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
	How were the values in the monitoring report verified?	<p>The value is monitored by project survey.</p> <p>The Project Survey and the WCFT have been conducted concurrently using the same sample which is confirmed in line with the PDD.</p> <p>The project survey has been carried out using representative and random sampling following the GS guidelines for minimum sample size 100 due to the number of units sold was greater than 1,000. PD has determined a sample size of 101 for project survey which is in line with the PDD. Via checking the records of randomly selected samples/14/, it is verified that PD has randomly selected the 101 samples from 467,123 water purifiers users using MS Excel software at the beginning of 2021.</p> <p>End users for the project survey have been selected using representative sampling techniques to ensure adequate representation of users with technologies of different ages. For this monitoring period, via checking the database of sales records/12/, it is confirmed that since the project started, all the 467,123 water purifiers finished sale within two months, hence, it is verified that all water purifiers involved in this monitoring period have the same age.</p> <p>Via checking the questionnaires of project survey/17/, it is confirmed that the monitoring team member conducted the in-person paper survey on 18/01/2021-28/01/2021 and all the 101 sampled end-users filled the questionnaires with end user basic characteristics, family size, technology use, fuel consumption and seasonal variations, etc.</p>

		Via checking the project survey summary table/18/ which was completed based on the original filled questionnaires of project survey/17/, it is verified that the value of $X_{cleanboil,y}$ is correct for this monitoring period.
	If applicable, has the reported data been cross-checked with other available data? (Yes / No)	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
	12. LE_y	
	Relevant SDG:	SDG13
	Parameter ID	SDWS 35
	Data/Parameter	LE_y
	Unit	tCO _{2e} per year
	Description	Leakage emissions during year y
	Value applied for this monitoring period	Refer to MR
	Measuring /Reading /Recording frequency	Every two years
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the registered PDD/3/ and applied methodology/37/.
	Monitoring equipment with accuracy	N/A
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
	How were the values in the monitoring report verified?	According to PDD, the leakage emissions in ex-ante evaluation are less than 5% of total emission reductions, so, the leakage emissions for this monitoring period is 5% of the total emission reductions which is confirmed in line with the section 3.8 of the applied GS methodology.

	If applicable, has the reported data been cross-checked with other available data? (Yes / No)	N/A
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.
	13. Number of males and females employed	
	Relevant SDG:	SDG8
	Parameter ID	SDWS 19
	Data/Parameter	Number of males and females employed
	Unit	Number
	Description	Jobs created for both men and women.
	Value applied for this monitoring period	12 jobs created including 6 males and 6 females
	Measuring /Reading /Recording frequency	Once for each monitoring period
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the PDD/3/.
	Monitoring equipment with accuracy	N/A The value is derived from Employment records/27/.
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
	How were the values in the monitoring report verified?	Monitoring parameter of number of males and females employed by the project was determined by checking the Employment records/27/ and labor contracts/28/, CTI verified that the number of jobs created during this monitoring period is 12, 6 female and 6 male employees included. CTI verified that the data in MR is correct.
	If applicable, has the reported data been cross-checked with other available data? (Yes / No)	Yes. The Employment records/27/ is cross checked with labor contracts/28/.

	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.
	14. Percentage of employees with salaries paid at par with the average wage of Kenya	
	Relevant SDG:	SDG8
	Parameter ID	SDWS 19
	Data/Parameter	Percentage of employees with salaries paid at par with the average wage of Kenya
	Unit	%
	Description	This parameter will be collected to indicate the project provides decent work for both men and women.
	Value applied for this monitoring period	100%
	Measuring /Reading /Recording frequency	Once for each monitoring period
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes, the measuring and reporting frequency are in line with the registered PDD/3/.
	Monitoring equipment with accuracy	N/A The value is derived from payroll/29/
	Is the installed monitoring equipment has been duly calibrated for this entire monitoring period? (Yes / No)	N/A
	How were the values in the monitoring report verified?	Monitoring parameter of Percentage of employees with salaries paid at par with the average wage of Kenya was determined by checking the annual payroll/29/. And the Kenya's Average Wage Earnings data has been searched from public information/54/. It is confirmed that Kenya's Average Wage Earnings data was reported at 147,000 KES in 2021. By comparing with the actual salary paid to employments and Kenya's Average Wage Earnings data, it is verified that all the number of employees were paid higher than that of Kenya in 2021, hence the value of 100% is verified as correct.
	If applicable, has the reported data been cross-checked with other available data?	Yes. The annual payroll/29/ is cross checked with Employment records/27/ and labor contracts/28/.

	(Yes / No)	
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, QA/QC procedures were found to be appropriate and reliable.
Findings	CAR 03, CAR 04, CL 06 and CL 07 were raised and resolved. Refer to Appendix 4 in this report for detail assessment.	
Conclusion	The parameters have been monitored appropriately, in accordance with the validated monitoring plan/3/ (as per measurement methods and procedures to be applied) and applied methodology/37/. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan/3/.	

E.6.3. Comparison of monitored parameters with last monitoring period

Means of verification	This is the 1 st monitoring period. PD has provided the values from this monitoring period for each monitoring parameters in the MR. Due to this is the 1 st monitoring period, hence no comparison results are needed.
Findings	N/A
Conclusion	Due to this is the 1 st monitoring period, hence no comparison results are needed.

E.6.4. Compliance of the sampling implementation with the registered sampling plan

Means of verification	The sampling approaches implemented as per the sampling plan in the PDD/3/ have been assessed in Section D.4 of this report. Refer to Section D.4 of this report for detail assessment of the sampling approaches implemented during this monitoring period.
Findings	N/A
Conclusion	According to latest version of Guidelines: "Sampling and surveys for CDM project activities and programmes of activities"/31/ and Standard: "Standard for sampling and surveys for CDM project activities and Programme of Activities"/32/, and based on the verification team's sectorial knowledge, the verification team confirms that the sampling approach applied by the PP is in accordance with the approved PDD and applied methodology.

E.7. Assessment of data and calculation of SDG impacts

E.7.1. Calculation of baseline value or estimation of baseline situation of each SDG Impact

Means of verification	<p>SDG 13 Baseline Impact:</p> <p>Via checking the MR/1/ and through checking the emission reduction calculation sheet/2/, CTI confirmed that there were baseline emissions as calculated below,</p> <p>Baseline Emissions BE_y Calculation Assessment:</p> <p>Via checking the section 3.6 of the applied methodology, the baseline emissions BE_y in a year y are calculated as below steps:</p> <p>1. The baseline emission factor shall be calculated as follows</p> $EF_b = SE_{w,b,y} * \sum_f (x_f * (EF_{b,f,CO2} * f_{NRB,f,y} + EF_{b,f,nonCO2})) \div 10^9 \quad (1)$ <p>And via checking the results of baseline survey/26/, it is confirmed that the main fuels used are non-renewable biomass of firewood, charcoal and LPG for treat drinking water by boiling in baseline scenario.</p>
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Hence, for this project, EF_b can be calculated as the following equation.

$$EF_b = SE_{w,b,y} * (x_{firewood} * (EF_{b,firewood,CO2} * f_{NRB} + EF_{b,firewood,nonCO2}) + x_{charcoal}^{(2)} * (EF_{b,firewood,nonCO2} + x_{LPG} * (EF_{b,LPG,CO2} + EF_{b,LPG,nonCO2}))) \div 10^9 \quad (2)$$

Where:

EF_b	= Emission factor for the use of fuel to obtain safe water in the baseline (tCO ₂ e/L)
$SE_{w,b,y}$	= Specific energy required to boil water (kJ/L)
$x_{firewood}$	= Proportion of firewood used in the baseline (fraction)
$x_{charcoal}$	= Proportion of charcoal used in the baseline (fraction)
x_{LPG}	= Proportion of LPG used in the baseline (fraction)
$EF_{b,firewood,CO2}$	= CO ₂ emission factor from use of firewood (tCO ₂ /TJ)
$EF_{b,firewood,nonCO2}$	= Non-CO ₂ emission factor arising from use of firewood (tCO ₂ e/TJ)
$EF_{b,charcoal,CO2}$	= CO ₂ emission factor from use of charcoal (tCO ₂ /TJ)
$EF_{b,charcoal,nonCO2}$	= Non-CO ₂ emission factor arising from use of charcoal (tCO ₂ e/TJ)
$EF_{b,LPG,CO2}$	= CO ₂ emission factor from use of LPG (tCO ₂ /TJ)
$EF_{b,LPG,nonCO2}$	= Non-CO ₂ emission factor arising from use of LPG (tCO ₂ e/TJ)
$f_{NRB,f,y}$	= Fractional non-renewability status of woody biomass fuel during year y , in case the baseline fuel is biomass or charcoal
f	= Index for baseline fuel types

2. The specific energy required to boil water using the baseline technology ($SE_{w,b,y}$) is determined as follows, by calculating the energy input required to obtain 1 L of boiling water, including boiling and vaporization losses.

$$SE_{w,b,y} = 360.83 / \eta_{wb} \div 10^9 \quad (3)$$

Where:

360.83	= Default amount of energy required to boil 1 L of water from a first principles approach
η_{wb}	= Efficiency of the baseline water boiling (%). Weighted average of baseline stove types.

3. The baseline emissions shall be calculated as follows:

$$BE_y = EF_b * (1 - C_b - X_{cleanboil,y}) * Q_y * M_{q,y} \quad (4)$$

Where:

BE_y	= Baseline emissions from the use of fuel to obtain safe water in the baseline (tCO ₂ e)
C_b	= Proportion of project households who in the baseline were already using a safe water supply that did not require boiling it (%)
$X_{cleanboil,y}$	= Proportion of project households that boil safe water in the project year y (%)
Q_y	= Quantity of safe drinking water provided by the project in year y (L)
$M_{q,y}$	= Modifier for the water quality in year y

The quantity of safe drinking water provided by the project (Q_y) can be calculated using Method 2, which applies to projects using household water treatment technologies (HWT).

$$Q_y = \sum_p N_{p,y} * U_{p,y} * QPW_{hh,p,y} * DP_{p,y} \quad (4)$$

Where:

$N_{p,y}$	= Number of premises type p with at least one project technology in year y
$U_{p,y}$	= Usage rate of the project technology by premises type p during

year y (%)

$QPW_{hh,p,y}$ = Volume of drinking water per premises p per day in year y (L)

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

The volume of drinking water per household per day is determined by considering whether the capacity of the project device is sufficient to provide at least the default amount of drinking water, as follows.

$$QPW_{hh,p,y} = \min((q_i * t_{p,y} * DN_{p,y}), (QPW_p * HN_{p,y})) \quad (5)$$

Where:

q_i = Capacity of the household water treatment technology (L/h)

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

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

$HN_{p,y}$ = Number of individuals per premises type p in year y

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

The values monitored during monitoring survey are transparently shown in the Monitoring Report Section D.2. During remote verification, the verification team cross-checked these values in detail using various supporting records and documents. Refer to the section E.6.1 and E.6.2 of this report for ex-ante and ex-post parameters' assessment.

The **SDG 13 Baseline Impact** (Baseline emission calculation) is provided in the Emission reduction calculation spreadsheet/2/ in a transparent manner and the calculation found correct. There is no material error noted in the accounting and application of various data against monitored parameters.

The Baseline Impact for SDG 13 during this monitoring period is summarized as below,

Date	C_b (%)	$X_{cleanboil,y}$ (%)	Q_y (L)	$M_{q,y}$	BE_y (tCO ₂ e/y r)
10/10/2020-31/10/2020	20%	0%	28,734,140	100%	5,176
01/11/2020-30/11/2020	20%	0%	130,957,933	100%	23,359
01/12/2020-31/12/2020	20%	0%	193,318,854	100%	34,483
10/10/2020-31/12/2020	-	-	353,010,926	-	62,567
01/01/2021-31/01/2021	20%	0%	193,318,854	100%	34,483
01/02/2021-28/02/2021	20%	0%	174,610,577	100%	31,145
01/03/2021-31/03/2021	20%	0%	193,318,854	100%	34,483
01/04/2021-30/04/2021	20%	0%	187,082,762	100%	33,370
01/05/2021-31/05/2021	20%	0%	193,318,854	100%	34,483
01/06/2021-30/06/2021	20%	0%	187,082,762	100%	33,370
01/07/2021-31/07/2021	20%	0%	193,318,854	100%	34,483
01/01/2021-31/07/2021	-	-	1,322,051,515	-	234,137
Total:					296,704

	<table><tr><td>10/10/2020-31/07/2021</td><td></td><td></td><td></td><td></td><td></td></tr></table> <p>Total Baseline Impact for SDG 13 (baseline emissions) of the 1st monitoring period (10/10/2020-31/07/2021) is thus verified as 296,704 tCO₂e. Among this, baseline emissions were 62,567 tCO₂e from 10/10/2020 to 31/12/2020, and 234,137 tCO₂e from 01/01/2021 to 31/07/2021.</p> <p>SDG 6 Baseline Impact:</p> <p>In the baseline situation, as per the interview with end users, CTI verified that no number of person.days served with satisfactory level of safe water. Therefore, Baseline Impact is zero.</p> <p>SDG 7 Baseline Impact:</p> <p>In the baseline situation, as per the interview with end users, CTI verified that no project water purifiers would be sold from the project. Therefore, Baseline Impact is zero.</p> <p>SDG 8 Baseline Impact:</p> <p>In the baseline situation, as per interview with representative of staffs, CTI verified that no new job created and no percentage of employees with salaries paid at par with the average wage of Kenya without this project. Therefore, Baseline Impact is zero.</p>	10/10/2020-31/07/2021					
10/10/2020-31/07/2021							
Findings	<p>CAR 05 was raised and resolved.</p> <p>Refer to Appendix 4 in this report for detail assessment.</p>						
Conclusion	<p>The verification team confirms that</p> <ul style="list-style-type: none">a) The complete data was available and is duly reported;b) As indicated above, the description with regards to cross-check of reported data is included under respective parameter (refer Section E.6.2 of this report);c) Appropriate methods and formulae are used for calculating baseline SDG impact;d) Appropriate emission factors and other reference values were correctly applied.e) The calculation of baseline situation of each SDG impact is correct.						

E.7.2. Calculation of project value or estimation of project situation of each SDG Impact

Means of verification	<p>SDG 6 Project Impact:</p> <p>For SDG 6, the project sold water purifiers to households hence enables number of person.days served with satisfactory level of safe water, as per the PDD, the formular for calculation of SDG 6 is as below,</p> $\text{Project outcome of SDG6} = N_{p,y} * HN_{p,y} * DP_{p,y} * U_{p,y} * M_{q,y}$ <p>as assessed in E.6.2, CTI verified that the values of above parameters have been verified for this monitoring period, hence</p> <p>From 10/10/2020 to 31/12/2020, the total number of person.days served with satisfactory level of safe water is 92,724,201,</p> <p>From 01/01/2021 to 31/07/2021, the total number of person.days served with satisfactory level of safe water is 347,258,860,</p> <p>Therefore, the SDG 6 Project Impact for this monitoring period from 10/10/2020 to 31/07/2021 is the total number of person.days served with satisfactory level of safe water is 439,983,061.</p> <p>SDG 7 Project Impact:</p> <p>For SDG 7, the project sold water purifiers to households, as assessed in E.6.2, CTI verified that the</p> <p>From 10/10/2020 to 31/12/2020, the number of water purifiers sold is 467,123</p> <p>From 01/01/2021 to 31/07/2021, the number of water purifiers sold is 0.</p>
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	<p>Therefore, the SDG 7 Project Impact for this monitoring period from 10/10/2020 to 31/07/2021 is the number of water purifiers sold is 467,123.</p> <p>SDG 8 Project Impact:</p> <p>For SDG Indicator 8,</p> <p>From 10/10/2020 to 31/12/2020, 12 jobs for local people were created (including 6 females and 6 males), the percentage of employees with salaries paid at par with the average wage of Kenya is 100%, which is verified in section E.6.2.</p> <p>From 01/01/2021 to 31/07/2021, 12 jobs for local people were created (including 6 females and 6 males), the percentage of employees with salaries paid at par with the average wage of Kenya is 100%, which is verified in section E.6.2.</p> <p>For this monitoring period from 10/10/2020 to 31/07/2021, 12 jobs for local people were created (including 6 females and 6 males), the percentage of employees with salaries paid at par with the average wage of Kenya is 100%, which is verified in section E.6.2.</p> <p>Hence CTI confirmed the project is beneficial to local stakeholders.</p> <p>SDG 13 Project Impact:</p> <p>Project Emission Calculation Assessment:</p> <p>As per the PDD and applied methodology, for this project activity, via checking the technical specification of Multi-Layer water purifiers/10/ and checking the photos of the water purifiers/23/, it is confirmed that the Multi-Layer water purifiers introduced by the project require no energy input or consumables, which will offer an affordable, long-term and zero emission solution for households that generally consume unsafe drinking water. No fossil fuel or electricity will be used in the project activity, hence project emissions (PE_p) is 0 tCO_{2e}.</p> <p>Total Project Impact for SDG 13 (project emissions) is 0 tCO_{2e}.</p>
Findings	<p>CAR 06 was raised and resolved.</p> <p>Refer to Appendix 4 in this report for detail assessment.</p>
Conclusion	<p>The verification team confirms that</p> <ul style="list-style-type: none"> a) The complete data was available and is duly reported; b) As indicated above, the description with regards to cross-check of reported data is included under respective parameter (refer Section E.6.2. of this report); c) Appropriate methods and formulae for calculating project SDG impact were followed; <p>The calculation of project situation of each SDG impact is correct.</p>

E.7.3. Calculation of leakage

Means of verification	According to PDD, the leakage emissions in ex-ante evaluation are less than 5% of total emission reductions, so, the leakage emissions for this monitoring period is 5% of the total emission reductions which is confirmed in line with the section 3.8 of the applied GS methodology.
Findings	<p>CAR 07 was raised and resolved.</p> <p>Refer to Appendix 4 in this report for detail assessment.</p>
Conclusion	<p>The verification team confirms that</p> <ul style="list-style-type: none"> a) The complete data was available and is duly reported; b) As indicated above, the description with regards to cross-check of reported data is included under respective parameter (refer Section E.6.2. of this report); c) Appropriate methods and formulae for calculating leakages were followed.

E.7.4. Calculation of net benefits or direct calculation for each SDG Impact

Means of verification	<p>Calculation of net benefits as difference of baseline and project, leakage values or direct calculation for each SDG impact is as following,</p> <p>SDG 6 impact net benefit</p> <p>Net Benefit SDG 6 for 10/10/2020 to 31/12/2020 = Project Impact of SDG6 (the</p>
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total number of person.days served with satisfactory level of safe water is 92,724,201) – Baseline Impact of SDG6 (0) = the total number of person.days served with satisfactory level of safe water is 92,724,201

Net Benefit SDG 6 for 01/01/2021 to 31/07/2021= Project Impact of SDG6 (the total number of person.days served with satisfactory level of safe water is 347,258,860,) – Baseline Impact of SDG6 (0) = the total number of person.days served with satisfactory level of safe water is 347,258,860,

Net Benefit SDG 6 for 10/10/2020 to 31/07/2021 = Project Impact of SDG6 (the total number of person.days served with satisfactory level of safe water is 439,983,061) – Baseline Impact of SDG6 (0) = the total number of person.days served with satisfactory level of safe water is 439,983,061

SDG 7 impact net benefit

Net Benefit SDG 7 for 10/10/2020 to 31/12/2020 = Project Impact of SDG7 (the number of water purifiers sold is 467,123) – Baseline Impact of SDG7 (0) = the number of water purifiers sold is 467,123

Net Benefit SDG 7 for 01/01/2021 to 31/07/2021= Project Impact of SDG7 (the number of water purifiers sold is 0) – Baseline Impact of SDG7 (0) = the number of water purifiers sold is 0

Net Benefit SDG 7 for 10/10/2020 to 31/07/2021 = Project Impact of SDG7 (the number of water purifiers sold is 467,123) – Baseline Impact of SDG7 (0) = the number of water purifiers sold is 467,123

SDG 8 impact net benefit

From 10/10/2020 to 31/12/2020, Net Benefit SDG 8 (Number of males and females employed by the project) = Project Impact of SDG8 (12 jobs for local people were created (including 6 female and 6 male)) – Baseline Impact of SDG8 (0) =12 jobs for local people were created (including 6 female and 6 male)

From 01/01/2021 to 31/07/2021, Net Benefit SDG 8 (Number of males and females employed by the project) = Project Impact of SDG8 (12 jobs for local people were created (including 6 female and 6 male)) – Baseline Impact of SDG8 (0) =12 jobs for local people were created (including 6 female and 6 male)

From 10/10/2020 to 31/07/2021, Net Benefit SDG 8 (Number of males and females employed by the project) = Project Impact of SDG8 (12 jobs for local people were created (including 6 female and 6 male)) – Baseline Impact of SDG8 (0) =12 jobs for local people were created (including 6 female and 6 male)

From 10/10/2020 to 31/12/2020, Net Benefit SDG 8 (the percentage of employees with salaries paid at par with the average wage of Kenya) = Project Impact of SDG8 (the percentage of employees with salaries paid at par with the average wage of Kenya is 100%) – Baseline Impact of SDG8 (0) = the percentage of employees with salaries paid at par with the average wage of Kenya is 100%

From 01/01/2021 to 31/07/2021, Net Benefit SDG 8 (the percentage of employees with salaries paid at par with the average wage of Kenya) = Project Impact of SDG8 (the percentage of employees with salaries paid at par with the average wage of Kenya is 100%) – Baseline Impact of SDG8 (0) = the percentage of employees with salaries paid at par with the average wage of Kenya is 100%

From 10/10/2020 to 31/07/2021, Net Benefit SDG 8 (the percentage of employees with salaries paid at par with the average wage of Kenya) = Project Impact of SDG8 (the percentage of employees with salaries paid at par with the average wage of Kenya is 100%) – Baseline Impact of SDG8 (0) = the percentage of employees with salaries paid at par with the average wage of Kenya is 100%

SDG 13 impact net benefit

	<p>In accordance with applied methodology, registered PDD and validation report,</p> <p>Net Benefit SDG 13 = baseline emission – project emission – leakage emission = 296,704 tCO₂e – 0 tCO₂e -14,239 tCO₂e = 282,570 tCO₂e</p> <p style="text-align: center;">Emission Reductions Calculation</p> <table><tr><th><div>Parameters</div><div>Period</div></th><th>Baseline Emissions <i>BE_y</i> (tCO₂e)</th><th>Project Emissions <i>PE_y</i> (tCO₂e)</th><th>Leakage Emissions <i>LE_y</i> (tCO₂e)</th><th>Emission Reductions <i>ER_y</i> (tCO₂e)</th></tr><tr><td>10/10/2020-31/12/2020</td><td>62,567</td><td>0</td><td>2,981</td><td>59,586</td></tr><tr><td>01/01/2021-31/07/2021</td><td>234,137</td><td>0</td><td>11,153</td><td>222,984</td></tr><tr><td>10/10/2020-31/07/2021 Total</td><td>296,704</td><td>0</td><td>14,134</td><td>282,570</td></tr></table> <p>All the figures as per the monitoring report were cross-checked by the verification team against basic monitored data. Refer to section E.6.2 for detail assessments.</p>	<div>Parameters</div> <div>Period</div>	Baseline Emissions <i>BE_y</i> (tCO ₂ e)	Project Emissions <i>PE_y</i> (tCO ₂ e)	Leakage Emissions <i>LE_y</i> (tCO ₂ e)	Emission Reductions <i>ER_y</i> (tCO ₂ e)	10/10/2020-31/12/2020	62,567	0	2,981	59,586	01/01/2021-31/07/2021	234,137	0	11,153	222,984	10/10/2020-31/07/2021 Total	296,704	0	14,134	282,570
<div>Parameters</div> <div>Period</div>	Baseline Emissions <i>BE_y</i> (tCO ₂ e)	Project Emissions <i>PE_y</i> (tCO ₂ e)	Leakage Emissions <i>LE_y</i> (tCO ₂ e)	Emission Reductions <i>ER_y</i> (tCO ₂ e)																	
10/10/2020-31/12/2020	62,567	0	2,981	59,586																	
01/01/2021-31/07/2021	234,137	0	11,153	222,984																	
10/10/2020-31/07/2021 Total	296,704	0	14,134	282,570																	
Findings	N/A																				
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 regards to cross-check of reported data is included under respective parameter (refer Section E.6.2 of this report);</p> <p>c) Appropriate methods and formulae for calculating net benefits for each SDG impact were followed;</p> <p>The calculation of net benefits for each SDG impact is correct.</p>																				

E.7.5. Comparison of actual value of impacts with estimates in approved PDD

Means of verification	The verification team has checked if the MR includes a comparison of actual values of the monitoring period with the estimations in the PDD for each SDG impact. Conclusion is as below table				
		Item	Period	Values estimated in ex ante calculation of approved PDD	Actual values achieved during this monitoring period
	SDG6		10/10/2020-31/12/2020	Total number of person.days served with satisfactory level of safe water is 127,363,295	Total number of person.days served with satisfactory level of safe water is 92,724,201
			01/01/2021-31/07/2021	Total number of person.days served with satisfactory level of safe water is 321,440,697	Total number of person.days served with satisfactory level of safe water is 347,258,860
			10/10/2020-31/07/2021	Total number of person.days served with satisfactory level of safe water is 448,803,992	Total number of person.days served with satisfactory level of safe water is 439,983,061
	SDG7		10/10/2020-31/12/2020	The Number of water purifiers sold is 110,465	The Number of water purifiers sold is 467,123
			01/01/2021-31/07/2021	The Number of water purifiers sold is 278,794	The Number of water purifiers sold is 0
			10/10/2020-31/07/2021	The Number of water purifiers sold is 389,259	The Number of water purifiers sold is 467,123
	SDG8		10/10/2020-31/12/2020	12 jobs for local people created (including 6 females and 6 males). Percentage of employees with salaries paid at par with the average wage of Kenya:100%	12 jobs for local people created (including 6 females and 6 males). Percentage of employees with salaries paid at par with the average wage of Kenya:100%

	01/01/2021-31/07/2021	12 jobs for local people created (including 6 females and 6 males). Percentage of employees with salaries paid at par with the average wage of Kenya:100%	12 jobs for local people created (including 6 females and 6 males). Percentage of employees with salaries paid at par with the average wage of Kenya:100%
	10/10/2020-31/07/2021	12 jobs for local people created (including 6 females and 6 males). Percentage of employees with salaries paid at par with the average wage of Kenya:100%	12 jobs for local people created (including 6 females and 6 males). Percentage of employees with salaries paid at par with the average wage of Kenya:100%
	10/10/2020-31/12/2020	104,520 tCO ₂ e	59,586 tCO ₂ e
	SDG 13 01/01/2021-31/07/2021	266,967 tCO ₂ e	222,984 tCO ₂ e
	10/10/2020-31/07/2021	371,487 tCO ₂ e	282,570 tCO ₂ e
Findings	N/A		
Conclusion	The MR includes a summary table of comparison of actual values of the monitoring period with the estimations in the approved PDD for each SDG impact and the comparison results are confirmed as correct.		

E.7.6. Remarks on increase in achieved SDG Impacts from estimated value in approved PDD

Means of verification	<p>For SDG 6, the actual outcome was 439,983,061 person.days served with satisfactory level of safe water, which is 98.03% of the estimated value in PDD, which is similar to the estimated value.</p> <p>For SDG 7, the actual outcome was 467,123 water purifiers sold in this monitoring period, which is about 20% higher than the estimated value in PDD, due to the estimated value in the PDD is from business plan which was estimate by project owner, and the actual sold number is determined by checking the database of sales records/12/ which is the actual sale numbers in this monitoring period, and the sale was depending on the market and users' demand, hence is not controlled by project owner, hence it is reasonable that the actual value is higher than estimated in PDD. Furthermore, due to the water purifiers were imported from abroad, although the sales were better than estimated, only 467,123 water purifiers can be sold in this batch which can be meet the sales plan of the first year and the project owner will continue to sell water purifiers in the project area, but it takes time to carry out a series of commodity procurement, import and export inspection and other processes, so the next batch have been sold in this monitoring period.</p> <p>For SDG 8, there is no difference by comparison of actual value of impacts with estimates in approved PDD.</p> <p>For SDG 13, CTI confirmed that the actual value during this monitoring period was found to be 23.94% lower than ex-ante estimated value the for this project during this monitoring period, via comparing with the PDD estimated value, CTI verified that the change of three parameters, i.e. $N_{p,y}$, $DP_{p,y}$ and $U_{p,y}$ impact the actual emission reduction calculation, however these parameters depend on the actual use of the numbers of water purifier, hence the fluctuation is verified as reasonable. Hence CTI verified that the actual value lower than estimated in PDD is reasonable and acceptable.</p>
Findings	<p>CL 08 was raised and resolved.</p> <p>Refer to Appendix 4 in this report for detail assessment.</p>

Conclusion	The actual SDG impacts for 3 is higher and 6 and 13 are lower than the estimated values given in the validated PDD/3/, which is assessed as appropriate and accepted.
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E.8. Safeguards reporting

Means of verification	<p>Via checking the Section D.1 and Appendix 1 in PDD, CTI confirmed that there are two Safeguarding principles need to be monitored, i.e. principles 3 and principles 7.1.</p> <p>For Safeguarding principles 3, as requested in the PDD, the mitigation measure which related to Water Hygiene education campaigns, Ongoing water quality indicated as the fraction of the samples that pass the test of bacterial quality to a standard of <1cfu/100ml ($M_{q,y}$) have been monitored during this monitoring period. Refer to the section E.6.2 of this report for two parameters' assessment. And it is verified that the monitoring measurements are in line with the PDD and values are correct and reasonable, thus no need to update the mitigation measures.</p> <p>For Safeguarding principles 7.1, as requested in the PDD, Mitigation Measures added to the Monitoring Plan are: Leakage emissions in project scenario were assessed and will be re-assessed every two years. So, the related monitoring parameter are Leakage emissions. Refer to the section E.6.2 of this report for LE parameters' assessment. And it is verified that the monitoring measurements are in line with the PDD and values are correct and reasonable, the leakage emissions in this monitoring period is 5% of the total emission reduction, thus no need to update the mitigation measures.</p> <p>And via site visit and interview with local stakeholders, CTI verified that the project was implemented normally and in line with the design in the PDD, there was no information on any assessment questions answered 'Potentially' related to Safeguarding principles.</p> <p>All the Information on any assessment questions answered as "No", so there is no need to re-assessment the Safeguarding principles.</p>
Findings	N/A
Conclusion	All the Information on any assessment questions answered as "No", so there is no need to re-assessment the Safeguarding principles during this monitoring period.

E.9. Stakeholder inputs and legal disputes

Means of verification	<p>As confirmed through the onsite visit and interview with the local stakeholders, CTI verified that the inputs/grievances mechanism has been in place. As per onsite checking the photo of Grievance Book/25/ kept by local officers and internet/email address which has been provided during the validation process and interview with PD and local stakeholders, CTI verified that they have access to provide issues or comments through given methods.</p> <p>And via checking the different approach and remote verification with local stakeholders as assessed in section D.3 of this report, CTI verified that there were no inputs/grievances received during this monitoring period.</p>
Findings	N/A
Conclusion	<p>All the methods of continuous input /grievance mechanism are confirmed during remote verification and interviews.</p> <p>CTI verified that there were no comments/complaints received from the stakeholders during this monitoring period of the project activity.</p>

SECTION F. Internal quality control

The final verification report was undergone a technical review by a qualified independent reviewer before requesting issuance of the project activity. The technical review was performed by a technical reviewer qualified in accordance with CTI's qualification scheme for CDM and GS validation and verification that meets the criteria of EB and GS guidelines for qualification.

SECTION G. Verification opinion

The verification team assigned by the VVB (CTI) concludes that the 1st periodic verification of GS programme of activities “Multi-Layer Household Water Filtration System in Kenya” in Henan Province, China, as described in the validated PDD and final version of monitoring report, meets all relevant requirements set by the Gold Standard for the Global Goals Principles and Requirements.

The project activity was correctly implemented according to selected monitoring methodology and monitoring plan. The collected monitoring data allowed to verify the amount of achieved SDG impacts. And the project is contributed to sustainability development. Thus, the VVB is pleased to issue a positive verification opinion.

SECTION H. Certification statement

Shenzhen CTI International Certification Co., Ltd (CTI) has performed the 1st periodic verification of the SDG outcomes that have been reported for the GS project activity “Multi-Layer Household Water Filtration System in Kenya” in Henan Province, P. R. China for the monitoring period from 10/10/2020 to 31/07/2021.

The verification is based on the baseline and monitoring methodology Methodology for Emission Reductions from Safe Drinking Water Supply (Version 1.0), the PDD, and the final version of monitoring report. The verification consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up remote verification and interviews with project participants; iii) resolution of outstanding issues and the issuance of the final verification and certification report.

The PPs are responsible for the collection, calculation and determination of the SDG impacts data in accordance with the monitoring plan and the reporting of SDG impacts on the basis set out within the project monitoring report.

It is CTI's responsibility to provide an independent verification statement on the reported SDG impacts for the project. Based on an understanding of the risks associated with reporting of SDG impacts data and the controls in place to mitigate these, CTI planned and performed our work to obtain the information and explanations that we considered necessary to provide reasonable assurance that reported SDG impacts are fairly stated.

CTI confirms that the SDG impacts are calculated without material misstatements. Based on the evidence and information that are considered necessary to guarantee that SDG impacts are appropriately calculated, CTI confirms that the SDG impacts from the “Multi-Layer Household Water Filtration System in Kenya” during the monitoring period from 10/10/2020 to 31/07/2021 as follows:

Monitoring period Number: 1st

Monitoring period: 10/10/2020 to 31/07/2021

The verified amount of impact for each SDG in the PA as per commitment period is stated below;

SDG No.	Contribution for Vintage year		Total for this MP
	10/10/2020 to 31/12/2020	01/01/2021 to 31/07/2021	10/10/2020 to 31/07/2021
SDG 6	Total number of person.days served with satisfactory level of safe water is 92,724,201	Total number of person.days served with satisfactory level of safe water is 347,258,860	Total number of person.days served with satisfactory level of safe water is 439,983,061
SDG 7	The number of water purifiers sold is 467,123	The Number of water purifiers sold is 0	The Number of water purifiers sold is 467,123
SDG 8	12 jobs for local people created (including 6 females and 6 males). Percentage of employees with salaries paid at par with the average wage of Kenya:100%	12 jobs for local people created (including 6 females and 6 males). Percentage of employees with salaries paid at par with the average wage of Kenya:100%	12 jobs for local people created (including 6 females and 6 males). Percentage of employees with salaries paid at par with the average wage of Kenya:100%
SDG 13	59,586 tCO ₂ e	222,984 tCO ₂ e	282,570 tCO ₂ e

Appendix 1. Abbreviations

Abbreviations	Full texts
BE	Baseline Emission
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CL	Clarification Request
CO ₂	Carbon dioxide
CP	Crediting Period
DNA	Designated National Authority
EB	Executive Board
FAR	Forward Action Request
GHG	Green House Gas
GSC/GSP	Global Stakeholder Consultation Process
GS4GG	Gold Standard for the Global Goals
ILO	International Labour Organization
IPCC	Intergovernmental Panel on Climate Change
JMP	WHO/UNICEF Joint Monitoring Programme guidelines (JMP 2018)
KP	Kyoto Protocol
LSC	Local Stakeholder Consultation
MoV	Means of Validation
MP	Monitoring Plan
ODA	Official Development Assistance
PDD	Project Design Document
PE	Project Emission
PP	Project Participant
PS	Project Survey
QC/QA	Quality control/Quality assurance
SCR	Stakeholder Consultation Report
SD	Sustainable Development
SDG	Sustainable Development Goals
tCO _{2e}	Tonnes of Carbon di oxide equivalent
UNFCCC	United Nations Framework Convention on Climate Change
US	Usage Survey
V	Version
VER	Voluntary Emission Reduction
VVB	Validation and Verification Body
VVS	Validation and Verification Standard
WCFT	Water Consumption Field Test

Appendix 2. Competence of team members and technical reviewers

Ms. Guolian WANG

Satisfies the requirements of competence management system of CTI Certification, and is hereby appointed as:

Qualification						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	√	√	√	√	√	√

Scope	Technical Area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
SS 3: Energy demand	TA 3.1: Energy demand
SS 4: Manufacturing industries	TA 4.1: Cement and lime production
SS 5: Chemical industry	TA 5.1: Chemical industry
	TA 5.2: Caprolactam, nitric and adipic acid
SS 11: Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride	TA 11.1: Emissions of fluorinated gases
	TA 11.2: Refrigerant gas production
SS 12: Solvents use	TA 12.1: Chemical industry

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by:

Wu LIN

Wu Lin

Technical Competent Manager

Shenzhen, 01/01/2021

Ms. Liu Jia

Satisfies the requirements of the Certification Body of CTI and is hereby appointed as:

Qualification as						
Status	GHG Auditor	Validator	Verifier	Team Leader	Technical Reviewer	Technical Expert
Date	√	√	√	√	√	√

Scope	Technical area
SS 1: Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources
SS 3: Energy demand	TA 3.1: Energy demand

This appointment is valid for 3 years from its date of approval below and is bound by internal requirements of management system of the Certification Body of CTI.

Approved by:

Wu Lin

Wu Lin

Technical competent manager
Shenzhen, 01/07/2019

Appendix 3. Documents reviewed or referenced

No	Author	Title	References to the document	Provider
1.	PD	1 st periodic Monitoring Report of “Multi-Layer Household Water Filtration System in Kenya”	<ul style="list-style-type: none"> - Version No. 01, dated 07/08/2021 - Version No. 02, dated 07/10/2021 - Version No. 03, dated 24/11/2021 - Version No. 04, dated 14/01/2022 - Version No. 05, dated 10/02/2022 	PD
2.	PD	1 st periodic Emission Reduction Calculation spreadsheet of “Multi-Layer Household Water Filtration System in Kenya”	<ul style="list-style-type: none"> - Version No. 01, dated 07/08/2021 - Version No. 02, dated 07/10/2021 - Version No. 03, dated 24/11/2021 - Version No. 04, dated 14/01/2022 	PD
3.	PD	GS4GG Project Design document of “Multi-Layer Household Water Filtration System in Kenya”	<ul style="list-style-type: none"> - Version No. 06, dated 10/02/2022 	PD
4.	CTI	Validation report of “Multi-Layer Household Water Filtration System in Kenya”	<ul style="list-style-type: none"> - Version No. 4.0, dated 16/02/2022 	N/A
5.	PD	Stakeholder Consultation Report of “Multi-Layer Household Water Filtration System in Kenya”	<ul style="list-style-type: none"> - Version No. 01, dated 05/10/2021 	PD
6.	Registrar of companies	Company Registration Certificate	Company Registration Certificate of Climate Neutral Kenya Limited	PD
7.	Local Market Supervision and Administration Bureau	Business License	Business License of Profit Carbon Environmental Energy Technology (Shanghai) Co., Ltd.	PD
8.	Project Owner	Business plan	Business plan of water purifiers sales	PD
9.	Zhejiang Duanqi Renewable Energy Co., Ltd and Project Owner	Purchase contract	Multi-Layer water purifiers purchase contract	PD
10.	Zhejiang Duanqi Renewable Energy Co., Ltd	Technical specification	Technical specification of Multi-Layer water purifiers	PD
11.	Project Owner and end users	Purchase receipts	Purchase receipts of water purifiers	PD
12.	Project Owner	Database	Database of Sales Record including information of end-user	PD
13.	Project Owner and PD	Sample information table	Sample information table including information of all the selected samples	PD
14.	PD	Records of randomly selected samples	Records of randomly selected samples including screenshots for all the sampled surveys	PD
15.	Project Owner and	Questionnaires of JMP	Filled questionnaires of JMP	PD

	PD			
16.	Project Owner and PD	Water quality test reports	Laboratory water quality test reports for this monitoring period	PD
17.	Project Owner and PD	Questionnaires of PS	Questionnaires of project survey	PD
18.	Project Owner and PD	PS summary table	Project survey summary table based on the results from questionnaires of project survey	PD
19.	Project Owner and PD	Survey record form of WCFT	Filled survey record form of WCFT	PD
20.	Project Owner and PD	WCFT summary table	WCFT summary table based on the results from survey record form of WCFT	PD
21.	Project Owner and PD	Questionnaires of US	Filled questionnaires of usage survey	PD
22.	Project Owner and PD	US summary table	US summary table based on the results from questionnaires of usage survey	PD
23.	Project Owner	Photos	Photos of the water purifiers	PD
24.	Project Owner and PD	Photos of in-person survey	Photos of in-person survey and survey process for all the sample surveys	PD
25.	Project Owner	Photo	Photo of grievance expression book	PD
26.	Project Owner	Baseline Survey report	Baseline Survey report issued by project owner who conducted the baseline survey (BS) from 10/10/2020 to 20/12/2020	PD
27.	PD	Employment records	Employment records including employment information	PD
28.	PD and employees	Labor contracts	Labor contracts signed with employees for implementation of this project	PD
29.	PD	Salary Payroll	Monthly salary payrolls for employees	PD
30.	PD	Technical Training Records	Technical Training Records of project 1. Training Records for this monitoring period 2. Training register list 3. Training photos	PD
31.	UNFCCC	Guideline of Sampling and surveys	Guideline of Sampling and surveys for CDM project activities and programmes of activities, version 04.0	UNFCCC Website
32.	UNFCCC	Standard for Sampling and Surveys	Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities, version 08.0	UNFCCC Website
33.	UNFCCC	CDM Tool 30	"Calculation of the fraction of non-renewable biomass" (version 03.0)	UNFCCC Website
34.	IPCC	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories www.ipcc-nggip.iges.or.jp	Public Website
35.	IPCC	IPCC AR5	https://www.ipcc.ch/report/35/wg1/	Public Website
36.	WHO/UNICEF	Joint Monitoring Programme guidelines	JMP 2018 https://washdata.org/report/jmp-2018-core-questions-household-surveys	Public Website
37.	GS	Applied GS approved	"Methodology for Emission	GS

		methodology	Reductions from Safe Drinking Water Supply" (Version 1.0)	website
38.	GS	TPDDTEC (Version 3.1)	Approved GS Methodology: "Technologies and Practices to Displace Decentralized Thermal Energy Consumption – version 3.1, July 2015"	GS website
39.	GS	COVID 19: INTERIM MEASURES	RU_2021-v4_COVID-19_Interim-measures	GS website
40.	Kenya Government Standard	KS EAS 153	2018 East African Standard Specification for Packaged Drinking Water	Public Website
41.	World Health Organization	Recommended domestic water consumption value	https://www.who.int/water_sanitation_health/emergencies/ga/emergencies_ga5/en/	Public Website
42.	Kenya National Government	Water Act 2016	Issued on 20/09/2016	PD
43.	Ministry of Water and Irrigation	National Water Quality Management Strategy	https://wasreb.go.ke/national-water-quality-management-strategy/	Public Website
44.	Ministry of Environment, Water and Natural Resources	Kenya National Water Master Plan 2030	THE REPUBLIC OF KENYA MINISTRY OF ENVIRONMENT, WATER AND NATURAL RESOURCES WATER RESOURCES MANAGEMENT AUTHORITY FINAL REPORT	PD
45.	National Environment Management Authority	Water Survey Report	Water Survey Report approved by National Environment Management Authority from 01/06/2020 to 30/09/2020	PD
46.	Kenya National Bureau of Statistics	2019 Kenya Population and Housing Census Volume I: Population by County and Sub-county	https://www.knbs.or.ke/?wpdmp=2019-kenya-population-and-housing-census-volume-i-population-by-county-and-sub-county	Public Website
47.	World Health Organization	WHO recommendations	https://www.who.int/water_sanitation_health/diseases/WSH03.02.pdf	Public Website
48.	GS	GS4GG MR template	Gold Standard for the Global Goals Monitoring Report (MR) Template, version 1.1 in October 2020	GS Website
49.	GS	Gold Standard for the Global Goals Principles and Requirements	Version 1.2	GS Website
50.	GS	Gold Standard for the Global Goals Safeguarding Principles & Requirements	Version 1.2	GS Website
51.	GS	Gold Standard for the Global Goals Community Services Activity Requirements	Version 1.2	GS Website
52.	GS	Gold Standard for the Global Goals Stakeholder Consultation and Engagement Requirements	Version 1.2	GS Website
53.	GS	GS4GG GHG Emissions Reduction & Sequestration Product Requirements	Version 2.0	GS Website
54.	CEIC	Kenya's Average Wage	http://www.salaryexplorer.com/salary-survey.php?loc=111&loctype=1#:~:text=A%20person%20working%20in%20Kenya%20typically%20earns	Public Website

			%20around%20147%2C000%20KES,%2C%20transport%2C%20and%20other%20benefits	
55.	Gold Standard Organization	Gold Standard	http://www.goldstandard.org/	Website
56.	UNFCCC	UNFCCC	http://cdm.unfccc.int	Website
57.	VCS	VCS	http://www.v-c-s.org/	Website
58.	VVB	VVB questionnaires	Questionnaire provided by CTI to local experts for site visit interview and filled scanned version	N/A
59.	PP	Screenshots of the system	Screenshots of the sales system	PP
60.	PP	Retailer instructions	Retailer instructions	PP
61.	PP	Reseller list	Reseller list	PP
62.	Website	Public website of funder Rotor Energy Technology Corporation Limited	http://www.rotorenergy.com.cn/EN/CleanWater	Website

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

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

FAR ID	01	Section no.	-	Date : 15/02/2022
Description of FAR				
During verification, the PP must demonstrate that the project area does not overlap with that of another Gold Standard or other voluntary or compliance standard programme of a similar nature. E.g., if the household use water from boreholes which the clean water is claimed by existing carbon project, that same amount of water will be double counted under this project activity.				
Project participant response				Date : 15/02/2022
<p>In order to avoid the double counting and the overlap with that of another Gold Standard or other voluntary or compliance standard programme of a similar nature. When the water purifier was sold, the user's related information (include the date of sale, Geographic area of sale, Model/type of project technology sold and unique water purifier serial number, Mode of use: commercial, institutional, domestic and other, Number of water purifiers sold, Name, telephone number and address) will be recorded, see the "Database of Sales Record" for details. For the water purifiers sold by the project, the cross-serial number is not allowed between different projects and each project has a unique serial number naming rule. Furthermore, each water purifier also has its unique serial number, if there are other water purifier that don't belong to the proposed project was used within the project boundary, these water purifiers will not have the unique serial number and will not be taken into account.</p> <p>Also, from the project survey, the end users are Investigated whether to participant in another Gold Standard or other voluntary or compliance standard programme of a similar nature and the source of drinking water that is usually collected. The results showed that project users did not participate in another Gold Standard or other voluntary or compliance standard programme of a similar nature, and the water source is a nearby river, so the end users involved in this project will not overlap with that of another Gold Standard or other voluntary or compliance standard programme of a similar nature.</p>				
Documentation provided by project participant				
/1/, /12/, /59/				
VVB assessment				Date: 16/02/2022
<p>The clarification by PD has been checked, VVB confirmed that the related scheme for avoid double counting has been conducted by PD to consider the potential risk of overlap with that of another Gold Standard or other voluntary or compliance standard programme of a similar nature.</p> <p>When the water purifier was sold, the user's related information (include the date of sale, Geographic area of sale, Model/type of project technology sold and unique water purifier serial number, Mode of use: commercial, institutional, domestic and other, Number of water purifiers sold, Name, telephone number and address) will be recorded which has been confirmed by checking the Database of Sales Record/12/. Besides, the "screenshots of the system"/59/ has been checked, VVB confirmed that the water purifier serial number can be automatically generated in the system. With this unique No. the information of end user can be traced through the sales records recorded in the sales system.</p> <p>Furthermore, via checking photos of the water purifiers, it is confirmed that each water purifier sold in this project activity has unique serial numbers attached to the body of the water purifier so that to avoid any retailers or distributors from selling the same water purifier and registering it for two or more project developers. During the validation process of this project, via checking the Database of Sales Record including information of end-user, interview with water purifiers end users, it can be verified that no double counting will be created as the water purifiers without the unique serial number will not be taken into account. Finally, during the project survey, the end users were also investigated whether to participant in another Gold Standard or other voluntary or compliance standard programme of a similar nature and the source of drinking water that is usually collected. Via checking the project survey results, VVB confirmed that project users did not participate in another Gold Standard or other voluntary or compliance standard programme of a similar nature, and the water source is a nearby river, so the end users involved in this project will not overlap with that of another Gold Standard or other voluntary or compliance standard programme of a similar nature.</p> <p>FAR 01 is closed.</p>				
FAR ID	02	Section no.	-	Date : 15/02/2022
Description of FAR				
The VVB shall verify the replacement for the core filters after their lifetime and the availability of the spare filter at user premises.				

Project participant response	Date : 15/02/2022
The full original version of technical manual of water filter manufacturer has been provided to VVB, and from this document, it can be confirmed that the technology of the water purifier involved in this project is over 15 years.	
Documentation provided by project participant	
/1/	
VVB assessment	Date: 16/02/2022
Via checking the Technical specification of Multi-Layer water purifiers/10/, CTI confirmed that the lifetime is 15 years, hence during this verification period, no any replacement for the core filters occurred. This issue is remained and listed in the table 4 as FAR and will be checked in the next verification. FAR 02 is closed.	

FAR ID	03	Section no.	-	Date : 15/02/2022
Description of FAR				
The VVB shall randomly visit and interview the retailers from the list of retailers that provided by PP during Performance Certification to verify the date, number of sales, procedure of recording the sales to PP's database.				
Project participant response				Date : 15/02/2022
For this project, Climate Neutral Kenya Limited took advantage of the sales network that TRIOPT AFRICA LIMITED had built and delegated the sales work to TRIOPT AFRICA LIMITED, with their help, achieved gratifying sales performance. The specific sales model of this project is as follows: In areas with relatively prosperous economy, such as main urban areas and counties, TRIOPT has set up special sales points to sell products directly. In relatively remote townships and rural areas where the economy is slightly underdeveloped, the sales work was conducted by using the distribution network (for example, township convenient stores, rural shops) established by TRIOPT, i.e., using the local resellers developed by TRIOPT to sell the water purifiers. For the specific assignments, TRIOPT designated its five staff with professional sales experience as sales manager to respectively take charge of the sales of water purifiers in above five counties by means of the distribution network and connections established and obtained by Triopt in telecom industries over the years. The retailer instructions and the reseller list has been provided to VVB and all the information has been verified by the VVB.				
Documentation provided by project participant				
/1/, /60/, /61/				
VVB assessment				Date: 16/02/2022
The retailer instructions/60/ and specific reseller list/61/ have been checked by VVB, it is confirmed that there are total 224 resellers involved in the sale of device which located in each county. The name, address and contact No. of all the resellers have been provided in the list. Due to this verification has been conducted combine with the validation, and due to COVID-19, the remote audit was used and no site visit carried out. This issue is remained and listed in the table 4 as FAR and will be checked in the next verification. FAR 03 is closed.				

Table 2. CL from this verification

CL ID	01	Section no.	C	Date: 21/09/2021
Description of CL				
In the section C of MR, the PD stated that the sales plan for the first year was completed within two months, the actual sales situation needs to be clarified.				
Project participant response				Date: 07/10/2021
PP have stated the sales situation as: The sold of Multi-Layer water purifiers started on 09/10/2020 and sales plan for the first year was completed within two months and completed on 30/11/2020.				
Documentation provided by project participant				
/1/ version 02 /12/ /11/				
VVB assessment				Date: 08/10/2021
The revised MR is checked, CTI confirmed that the sales for water purifiers started on 09/10/2020 and sales plan for the first year was completed within two months and completed on 30/11/2020 which is verified as correct and actual by checking the database of sales records/12/ and purchase receipts/11/. CL 01 is closed.				

CL ID	02	Section no.	C	Date: 21/09/2021
Description of CL				
In the section C, for parameter $M_{q,y}$,				
<ol style="list-style-type: none"> How the monitoring time is in line with the request in PDD and methodology is not clarified. The actual situation of the laboratory used for this monitoring period is not clarified as per the requests in PDD and methodology. 				
Project participant response				Date: 07/10/2021
<p>1.PP have added the Footnotes to explain, the details as follows: As the requirement of approved methodology, the first round of testing shall be conducted at least after six months from the start date. The start date of the project is 09/10/2020, so the survey time 02/06/2021-11/06/2021 meet methodological requirements.</p> <p>2.P have added the laboratory qualification as: Entrust a qualified third-party testing agency-a microbiology laboratory affiliated with the Kenya Bureau of Standards (KEBS) to test the water quality, which is official organization with the ability to issue qualifications to other institution. so, the KEBS has the undoubted accreditation.</p>				
Documentation provided by project participant				
/1/ version 02 /13/ /16/ /40/				
VVB assessment				Date: 08/10/2021
<ol style="list-style-type: none"> The revised MR is checked, CTI confirmed that the monitoring time is clarified. Via checking the sample information table/13/, it is confirmed that hygiene education campaigns, and Water Quality Testing have been conducted together on 02/06/2021-11/06/2021 during the monitoring team member visiting end-user' homes to take water quality samples for water Quality Testing. Hence, it is confirmed that the testing have been conducted by annually sampling, and the first round of testing has been conducted at least after six months from the start date. The revised MR is checked, CTI confirmed that the authorization of laboratory is clarified. Via checking the laboratory water quality test reports/16/, it is confirmed that all the 101 samples have been analyzed in line with the standard of KS EAS 153: 2018 East African Standard Specification for Packaged Drinking Water/40/. Via checking the laboratory water quality test reports/16/, it is confirmed that the lab is a qualified third-party affiliated with the Kenya Bureau of Standards (KEBS) and thus confirmed as in compliance with requirement of the laboratory defined in the PDD as per the applied methodology. 				
CL 02 is closed.				

CL ID	03	Section no.	C	Date: 21/09/2021
Description of CL				
In the section C, for no double counting statement, the particularity of the naming rule is not clarified for this project.				
Project participant response				Date: 07/10/2021
PP have added the footnote to explain the naming rule as: the name of water purifier consists of project name (KWFP), sales region (K, N, M, T, B) and sales serial number, such as KWFP-B-1 means the first water purifier sold in Bungoma county of this project.				
Documentation provided by project participant				
/1/ version 02 /23/				
VVB assessment				Date: 08/10/2021
The revised MR is checked, CTI confirmed that the particularity of the naming rule has been clarified for this project and is confirmed as actual by checking the photos of the water purifiers/23/.				
CL 03 is closed.				

CL ID	04	Section no.	D.2	Date: 21/09/2021
Description of CL				
For parameter Project technology description, the description and source of data is not clarified as per the methodology and PDD.				
Project participant response				Date: 07/10/2021
For parameter Project technology description, PP have updated the description and source of data. See section D.2 for details.				
Documentation provided by project participant				

/1/ version 02	
VVB assessment	Date: 08/10/2021
The revised MR is checked, CTI confirmed that the description and source of data have been updated to be consistent with the PDD and in line with the requests of applied methodology. CL 04 is closed.	

CL ID	05	Section no.	D.2	Date: 21/09/2021
Description of CL				
For parameter $X_{firewood}/X_{charcoal}/X_{LPG}$, the statement of Additional comment is not in line with PDD.				
Project participant response				Date: 07/10/2021
PP have corrected the statement of additional comment, See D.2 for details.				
Documentation provided by project participant				
/1/ version 02				
VVB assessment				Date: 08/10/2021
The revised MR is checked, CTI confirmed that the information is in line with the updated PD. CL 05 is closed.				

CL ID	06	Section no.	D.2	Date: 21/09/2021
Description of CL				
For parameter $U_{p,y}$, PD stated that Water Consumption Field Test (WCFT) may be used to cross check the usage percentage as QA/QC procedure, however, if it is used for this monitoring period is not clarified.				
Project participant response				Date: 07/10/2021
PP added the result of cross check as: In this monitoring period, the results of WCFT show that users consumed the filtered water from the water purifier every day. Therefore, from the perspective of WCFT, the usage rate of the water purifier is 100%. However, we also conducted a usage survey and defined that the households at least once-in-two-days use may be counted as users. The usage survey results show that the usage rate of the project is 89%. Considering the conservative principle, the usage rate used to calculate emission reductions is 89%.				
Documentation provided by project participant				
/1/ version 02 /19/ /22/				
VVB assessment				Date: 08/10/2021
The revised MR is checked, CTI confirmed that the clarification has been added. Water Consumption Field Test (WCFT) is used to cross check the usage percentage. Via checking the WCFT/19/ results, CTI confirmed that the usage rate of the water purifier is 100%, hence the result of US summary table/22/ is confirmed as conservative. CL 06 is closed.				

CL ID	07	Section no.	D.2	Date: 21/09/2021
Description of CL				
For parameter Percentage of employees with salaries paid at par with the average wage of Kenya, PD stated that the project owner has guaranteed that the average wage of the employees was higher than that of Kenya in 2019, however, the actual wage of the employees is not clarified to support this statement.				
Project participant response				Date: 07/10/2021
PP have modified the description as: The project owner has guaranteed that the actual average wage of the employees was 235,000KES which higher than that of Kenya in 2019.				
Documentation provided by project participant				
/1/ version 02				
VVB assessment				Date: 08/10/2021
The revised MR is checked, CTI confirmed that the actual wage of the employees is clarified. Monitoring parameter of Percentage of employees with salaries paid at par with the average wage of Kenya was determined by checking the annual payroll/29/. And the Kenya's Average Wage Earnings data has been searched from public information/54/. It is confirmed that Kenya's Average Wage Earnings data was reported at 147,000 KES in 2021. By comparing with the actual salary paid to employments and Kenya's Average Wage Earnings data, it is verified that all the number of employees were paid higher than that of Kenya in 2021, hence the value of 100% is verified as correct. CL 07 is closed.				

CL ID	08	Section no.	E.6	Date: 21/09/2021
Description of CL				
For the actual number of water purifiers sold in this monitoring period comparing with the sales plan, PD has stated that "the water purifier involved in this project have a good quality, lower sales price and the project owner is responsible for maintenance and replacement of all parts, no additional costs will be incurred for the user's normal use" which means that the water purifier is popular in the market, however, PD is requested to clarify that why after the sales finished within two months, no more continuously for sale.				
Project participant response				Date: 07/10/2021
PP have explained the reason why the sold not be continued as follows: After all, the water purifiers involved in this project are imported products from foreign countries. Since this project is the first time for the project owner to implement in project area and in order to explore the acceptability of the local market and local people for the products, only 467,123 water purifiers can be sold in this batch which can be meet the sales plan of the first year. It can be seen from the first batch of sales, the number of water purifiers sold is objective and welcomed by the local people. Therefore, the project owner will continue to sell water purifiers in the project area, but it takes time to carry out a series of commodity procurement, import and export inspection and other processes. Moreover, the next batch have been sold in August 2021.				
Documentation provided by project participant				
/1/ version 02 /12/				
VVB assessment				Date: 08/10/2021
The revised MR is checked, CTI confirmed that the clarification has been added, The actual outcome was 467,123 water purifiers sold in this monitoring period, which is about 20% higher than the estimated value in PDD, due to the estimated value in the PDD is from business plan which was estimate by project owner, and the actual sold number is determined by checking the database of sales records/12/ which is the actual sale numbers in this monitoring period, and the sale was depending on the market and users' demand, hence is not controlled by project owner, hence it is reasonable that the actual value is higher than estimated in PDD. Furthermore, due to the water purifiers were imported from abroad, although the sales were better than estimated, only 467,123 water purifiers can be sold in this batch which can be meet the sales plan of the first year and the project owner will continue to sell water purifiers in the project area, but it takes time to carry out a series of commodity procurement, import and export inspection and other processes, so the next batch have been sold in this monitoring period. CL 08 is closed.				

Table 3. CAR from this verification

CAR ID	01	Section no.	Cover	Date: 21/09/2021
Description of CAR				
In the table 2 of MR, the total VERs achieved for this monitoring period is not equal to the values achieved during the 2020 and 2021, revision is requested.				
Project participant response				Date: 07/10/2021
PP have corrected the total VERs in table 2. Please refer to the MR.				
Documentation provided by project participant				
/1/ version 02				
VVB assessment				Date: 08/10/2021
The revised MR is checked, CTI confirmed that the values are corrected and the total VERs achieved for this monitoring period is equal to the values achieved during the 2020 and 2021. CAR 01 is closed.				

CAR ID	02	Section no.	A.1	Date: 21/09/2021
Description of CAR				
In the section A.1, the total number of water purifiers sold for this monitoring period is not provided.				
Project participant response				Date: 07/10/2021
PP have added the description as: in this monitoring period, the total number of water purifiers sold is 467,123.				
Documentation provided by project participant				
/1/ version 02 /12/				
VVB assessment				Date: 08/10/2021

The revised MR is checked, CTI confirmed that the value is added accordingly which is verified as consistent with other parts of MR and confirmed by checking the database of sales records/12/.
CAR 02 is closed.

CAR ID	03	Section no.	D.2	Date: 21/09/2021
Description of CAR				
For parameter Water hygiene education campaigns, the table template is not same to the request in MR template, revision is requested.				
Project participant response				Date: 07/10/2021
PP have corrected the table template of parameter Water hygiene education campaigns as the same as the request in MR template, please refer to the Section D.2 for details.				
Documentation provided by project participant				
/1/ version 02				
VVB assessment				Date: 08/10/2021
The revised MR is checked, CTI confirmed that the table format has been updated in line with MR template. And related information of this parameter has been added. Refer to section E.6.2 of this report for detail assessment. CAR 03 is closed.				

CAR ID	04	Section no.	D.2	Date: 21/09/2021
Description of CAR				
For parameter Number of water purifiers sold in year y, the measurement methods and procedures are not related to the actual monitoring of this parameter, revision is requested.				
Project participant response				Date: 07/10/2021
For parameter Number of water purifiers sold in year y, the measurement methods and procedures have been redescribed as: The water purifiers involved in the project are sold at the sales point in each region. For each water purifier sold, the sales personnel signed a sales contract with the buyer and filled the buyer's name, gender, water purifier number, sales time, sold region and other information in the sales record system. GS monitoring team exported the sales information in the system and summarized the sales record table into excel.				
Documentation provided by project participant				
/1/ version 02				
VVB assessment				Date: 08/10/2021
The revised MR is checked, CTI confirmed that the measurement methods and procedures of parameter Number of water purifiers sold in year y has been added. Refer to section E.6.2 of this report for detail assessment. CAR 04 is closed.				

CAR ID	05	Section no.	E.1	Date: 21/09/2021
Description of CAR				
In section E.1, 1. The basic parameters for BE calculation listed in table 4 is not related to the BE calculation formula. 2. The baseline impact of SDG 6 in table 5 is not correct. 3. The baseline impact of SDG 8 in table 5 is not complete.				
Project participant response				Date: 07/10/2021
1. PP have updated the basic parameters for BE calculation listed in table 4. Please refer. 2. the baseline impact of SDG 6 in table 5 have corrected as: In the absence of the project activity, no project water purifiers would be sold, so, the total number of person.days served with satisfactory level of safe water is 0,i.e., the baseline outcome benefit of SDG6 is 0. 3. The baseline impact of SDG 8 in table 5 have corrected as: In baseline scenario, this project did not exist, so the number of males and females employed by the project is 0, the Percentage of employees with salaries paid at par with the average wage of Kenya is 0. Therefore, the baseline outcome benefit is 0.				
Documentation provided by project participant				
/1/ version 02				
VVB assessment				Date: 08/10/2021

1. The revised MR is checked, CTI confirmed that the basic parameters for BE calculation listed in table 4 have been updated in line with the related formula.
2. The revised MR is checked, CTI confirmed that baseline impact of SDG 6 is updated and related to the actual monitoring situation.
3. The revised MR is checked, CTI confirmed that the baseline impact of SDG 8 is complete with two monitoring parameters.
CAR 05 is closed.

CAR ID	06	Section no.	E.2	Date: 21/09/2021
Description of CAR				
In section E.2, the basic parameters listed in table 6 is not related to the Project outcome of SDG6 calculation formula. Revision is requested.				
Project participant response				Date: 07/10/2021
The basic parameter listed in table 6 have been modified, please refer.				
Documentation provided by project participant				
/1/ version 02 /NDC/ /26/				
VVB assessment				Date: 08/10/2021
The revised MR is checked, CTI confirmed that the basic parameters for Project outcome of SDG6 calculation listed in table 6 have been updated in line with the related formula.				
CAR 06 is closed.				

CAR ID	07	Section no.	E.3	Date: 21/09/2021
Description of CAR				
In section E.3, the calculation method of leakage listed in table 7 is not clear, it states that the leakage emission is 5% of the total emission reductions, however, the baseline emission is listed in the table.				
Project participant response				Date: 07/10/2021
In section E.3, PP have explained the calculation of leakage emission, and the baseline emission and leakage emission both listed in table7.				
Documentation provided by project participant				
/1/ version 02				
VVB assessment				Date: 08/10/2021
The revised MR is checked, CTI confirmed that the table has been updated in compliance with the description.				
CAR 07 is closed.				

Table 4. FAR from this verification

FAR ID	01	Section No.	-	Date: 18/01/2022
Description of FAR				
To ensure transparency of sampling process, the PP shall use the online number generator and keep the screenshot of generated result.				
Project participant response				Date: 18/01/2022
Will be used in the next monitoring period.				
Documentation provided by project participant				
-				
VVB assessment				Date: 18/01/2022
Will be checked in the next verification.				

FAR ID	02	Section No.	-	Date: 15/02/2022
Description of FAR				
The VVB shall randomly visit and interview the retailers from the list of retailers that provided by PP during Design Certification to verify the date, number of sales, procedure of recording the sales to PP's database.				
Project participant response				Date: 15/02/2022
N/A				
Documentation provided by project participant				
-				
VVB assessment				Date: 16/02/2022

Will be checked in the next verification.			
FAR ID	03	Section no.	-
Date : 15/02/2022			
Description of FAR			
The VVB shall verify the replacement for the core filters after their lifetime and the availability of the spare filter at user premises.			
Project participant response			Date : 15/02/2022
N/A			
Documentation provided by project participant			
/1/			
VVB assessment			Date: 16/02/2022
Will be checked in the next verification.			