



Verification and certification report form for Gold Standard programme of activity

BASIC INFORMATION	
Title and GS reference number of Programme of activity	Improved Kitchen Regimes Multi- Country PoA, (GS1247)
Scale of the project activity	☐ Large-scale ☐ Small-scale ☒ Micro-Scale
Version number of the verification and certification report	03
Completion date of the verification and certification report	21/09/2023
Monitoring period number and duration of this monitoring period	Monitoring period Number 3 rd GS7456: 16/08/2021–15/08/2022 VPA 190 The Zambia Eastern Province Safe Water Project (including both the days) GS7457: 16/08/2021–15/08/2022 VPA 191 The Zambia Eastern Province Safe Water Project (including both the days) GS7458: 16/08/2021–15/08/2022 VPA 192 The Zambia Eastern Province Safe Water Project (including both the days) GS7459: 16/08/2021–15/08/2022 VPA 193 The Zambia Eastern Province Safe Water Project (including both the days) GS7460: 16/08/2021–15/08/2022 VPA 194 The Zambia Eastern Province Safe Water Project (including both the days)
Version number of the monitoring report to which this report applies	Version: 12 Dated: 21/09/2023
Crediting period of the project activity corresponding to this monitoring period	GS7456: 15/05/2019 – 15/05/2024 (including both the days) GS7457: 15/05/2019 – 15/05/2024 (including both the days) GS7458: 15/05/2019 – 15/05/2024 (including both the days) GS7459: 15/05/2019 – 15/05/2024 (including both the days) GS7460: 15/05/2019 – 15/05/2024 (including both the days)
Project representative(s)	Emma Donnachie CO2 Balance UK Limited
Host Party	Republic of Zambia
Applied methodologies and standardized baselines	Technologies and Practices to displace decentralized thermal energy consumption” methodology (TPDDTEC) v.1
Mandatory sectoral scopes	03- Energy Demand
Conditional sectoral scopes, if applicable	-

Estimated amount of GHG emission reductions or GHG removals for this monitoring duration in the registered PDD	GS7456: 10,000 VERs GS7457: 10,000 VERs GS7458: 10,000 VERs GS7459: 10,000 VERs GS7460: 10,000 VERs Total :150,000 VERs
Certified amount of GHG emission reductions or GHG removals for this monitoring period	GS7456: 3550 VERs GS7457: 2576 VERs GS7458: 3050 VERs GS7459: 2792 VERs GS7460: 2298 VERs Total: 14,266 VERs
SDG Impacts:	1. SDG 3: Good health and wellbeing 2. SDG 5: Gender Equality 3. SDG 6: Clean water and sanitation 4. SDG13: Climate Action
Name and UNFCCC reference number of the VVB	E-0052: Carbon Check (India) Private Ltd.
Name, position and signature of the approver of the verification and certification report	 Vikash Kumar Singh, Compliance Officer

SECTION A. Executive summary

Carbon Check (India) Private Ltd. (CC IPL) is performing the 3rd periodic verification of the GS POA titled “Improved kitchen Regimes Multi-country POA(GS1247)”

“GS1247 VPA 190 The Zambia Eastern Province Safe Water (GS7456)
GS1247 VPA 191 The Zambia Eastern Province Safe Water (GS7457)
GS1247 VPA 192 The Zambia Eastern Province Safe Water (GS7458)
GS1247 VPA 193 The Zambia Eastern Province Safe Water (GS7459)
GS1247 VPA 194 The Zambia Eastern Province Safe Water (GS7460)” for the period 16/08/2021-15/08/2022 (inclusive of both dates) for all VPAs. The project activity involves rehabilitating non-functioning water points to provide villages with a source of safe water within the provinces of Zambia. The start date of the project activity is.

GSID	Crediting period Start Date
GS7456	15/08/2019
GS7457	15/08/2019
GS7458	15/08/2019
GS7459	15/08/2019
GS7460	15/08/2019

According to the POA&VPA- DD /B03/ & MR /01/

GS1247 VPA 190 The Zambia Eastern Province Safe Water (GS7456)
GS1247 VPA 191 The Zambia Eastern Province Safe Water (GS7457)
GS1247 VPA 192 The Zambia Eastern Province Safe Water (GS7458)
GS1247 VPA 193 The Zambia Eastern Province Safe Water (GS7459)

¹ Capped value is considered for all VPAs, applicable for Monitoring Period 16/08/2021-15/08/2022 (12 months)

GS1247 VPA 194 The Zambia Eastern Province Safe Water (GS7460)" the overall objective of the VPA is to contribute to the achievement of the Sustainable Development Goals (SDGs) under SDG 3, SDG 5, SDG 6, and SDG 13 by providing safe water, the project will ensure that households consume less solid fuel(firewood & coal) during the process of water purification and as a result there shall be a reduction of carbon dioxide emissions from the reduction of combustion of firewood and coal.

This report summarises the findings of the verification of the project, performed on the basis of Gold Standard for global goals (GS4GG) /B02/, as well as criteria given to provide for consistent project operations, monitoring and reporting and the subsequent decisions by the Gold Standard. Verification is required for all registered GS project activities intending to confirm their achieved emission reductions and proceed with request for issuance of VERs. This report contains the findings and resolutions from the verification and a certification statement for the verified emission reductions.

Verification is the periodic independent review and ex-post determination of both quantitative and qualitative information by a Validation & Verification body (VVB), of the monitored reductions in GHG emissions under SDG 13 including the achievement of other SDGs mentioned above that have occurred as a result of the project activity during a defined monitoring period.

Certification is the written assurance by a Validation & Verification body (VVB) that, during a specific period, a project activity achieved the emission reductions as verified.

The objective of this verification was to verify and certify achievement of SDGs reported for the:

GS1247 VPA 190 The Zambia Eastern Province Safe Water (GS7456)

GS1247 VPA 191 The Zambia Eastern Province Safe Water (GS7457)

GS1247 VPA 192 The Zambia Eastern Province Safe Water (GS7458)

GS1247 VPA 193 The Zambia Eastern Province Safe Water (GS7459)

GS1247 VPA 194 The Zambia Eastern Province Safe Water (GS7460)" in the host country "Zambia" for the period 16/08/2021-15/08/2022(including both the days) for all VPAs.

The purpose of verification is to review the monitoring results and verify that the monitoring methodology was implemented according to the monitoring plan and monitoring data and used to confirm the reductions in anthropogenic emissions by sources, is sufficient, definitive and presented in a concise and transparent manner. CCIPL's objective is to perform a thorough, independent assessment of the registered project activity.

In particular, the monitoring plan, monitoring report and the project's compliance with relevant GS and Host Party criteria are verified in order to confirm that the component project has been implemented in accordance with the previously registered project design/B03/ and conservative assumptions, as documented. It is also confirmed if the monitoring plan is in compliance with the registered VPA-DD /B03/ and the approved monitoring methodology /B01/.

Scope:

The scope of the verification is:

- To verify the project implementation and operation with respect to the registered VPA-DD /B03/
- To verify the implemented monitoring plan with the registered VPA-DD /B03/ and applied baseline and monitoring methodology /B01/.
- To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.

The verification shall ensure that the reported emission reductions /02-c/ are complete and accurate in order to be certified.

Verification process:

The verification comprises a review of the monitoring report /01/ over the monitoring period from 16/08/2021-15/08/2022 and based on the registered VPA-DD /B03/ as part of the monitoring parameters and

monitoring plan, emission reduction calculation spreadsheet /02-c/, monitoring methodology /B01/, and all related evidence provided by project participants.

Remote interviews and inspections are being performed during verification process.

Conclusion:

The verification team assigned by the Validation & Verification body (VVB) concludes that the monitoring report /01/, meet all relevant requirements of the Gold Standard as per the requirements of GS4GG /B02/. The verification has been conducted in-line with the GS4GG requirements.

The project activity was correctly implemented according to the selected monitoring methodology /B01/, monitoring plan and the registered VPA-DD /B03/. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. The following table provides the resulted emission reduction from the project as verified through the document review and remote interviews by the verification team.

VPA NO	2021 vintage	2022 vintage	VERs
VPA 190	1343	2207	3550
VPA 191	558	2018	25765
VPA 192	820	2230	3050
VPA 193	597	2195	2792
VPA 194	447	1851	2298
TOTAL EMISSION REDUCTION	3765	10501	14266

CC IPL as a Validation & Verification body (VVB) is therefore pleased to issue a positive verification opinion expressed in section F of this report.

SECTION B. Verification team, technical reviewer and approver

B.1. Verification team member

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of VVB or outsourced entity)	Involvement in			
						Desk/document review	On-site inspection	Interviews	Verification findings
1.	Team Leader / Verifier / Technical Expert	IR	Sharma	Harish	CC IPL	X	N/A	X	X
2.	Trainee Assessor	IR	Yadav	Shalini	CC IPL	X	N/A	X	X
3.	Local Expert	ER	Msoni	Joyce	CC IPL		X	X	

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	IR	C	Indumathi	CC IPL
2.	Approver	IR	Singh	Vikash Kumar	CC IPL

SECTION C. Means of verification

C.1. Desk/document review

The verification was performed based on the review of the Monitoring report /01/ and the supporting documentation. This process included review of data and information presented to verify their completeness and review of the monitoring plan and monitoring methodology /B01/. Documents reviewed or referenced during the verification are listed in Appendix 3 of the report.

C.2. On-site inspection

The remote audit has been performed on 01/02/2023 to 02/02/2023. The Team leader along with Trainee Assessor and local expert has conducted the remote interview inspection and in particular the acceptance sampling.

Furthermore, VVB has considered Remote Audit Requirements and Procedures, version 1.0/B06/ for conducting the remote interview in accordance with the requirements provided in the §3.1.1(b) of the Remote Audit Requirements and Procedures, version 1.0 /B06/.

In line with 4.1.1 (b) of “Site visit and remote audit requirement and procedures”, and in line with 2.2.3(i) of “Applicability of minimum site visit requirement by VVB” In line with the guideline of GS4GG for microscale projects, the on-site visit is not necessary within three years of the last visit of the objective observer. Hence, considering ‘Microscale Project Requirements’ Section 11.1.2 The impact assessment has been carried out to analyse the risk associated with the non-conduction of mandatory physical on-site inspection for verification which is in line with the Annex 1 Risk assessment guideline of “Site visit and remote audit requirement and procedures” and the same is provided below.

Risk associated to the non-conduction of mandatory physical on-site inspection for verification.

Sr. No	Identification of potential risks	Mitigation measures	Risk Mitigated
1.	Risk associated to verify project implementation and operation with respect to the registered/included documents (PDD/PoA DD, CPADD)	During remote interviews by means of using audio/video call (as feasible) and real time photographs at the time of remote inspection, the name plate which includes capacities can be checked. Cross checking the same through other relevant documents such as statutory clearances. Logbooks can be checked randomly over video call/ by means of remote access, either synchronously (in real	☒ Yes ☐ No

		time) or asynchronously (when applicable) during remote inspection. screenshot of the logbooks can also be checked.	
2	Risk associated to verify implemented monitoring plan with the registered/included documents (PDD/PoA-DD, VPA-DD) and applied baseline and monitoring methodology.	This risk can be mitigated by conducting remote interview via audio/video call with end users to cross check the Monitoring parameters described in certified versions of POA-DD / VPA-DD vis-à-vis their monitoring equipment/procedures and also to check records like logbooks, receipts and calibrations certificates etc.	☒ Yes ☐ No
3	Risk associated to verify that the actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan.	This risk can be mitigated during remote interview video call/video recording/a real time photo of the monitoring equipment along with make and model, to check whether calibration of each of the measuring equipment is done at intervals specified in the registered document (PDD/PoA DD/VPA DD). Furthermore, this can be cross verified by reviewing of all the calibration certificates and taking note of the date of calibration on each one for each specific monitoring equipment. Interviewing the relevant personnel to ensure that the calibration procedures are being followed as per the registered monitoring plan.	☒ Yes ☐ No
4	Risk associated to evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance on whether the reported GHG emission reduction data is free from material misstatement.	The identified risk can be mitigated by managing access to the records during audio/video calls. It can be verified whether a project has adequate controls related to data changes/updates, version tracking, traceability, security and whether data is reproduceable from the sample sheets. Furthermore, data quality control personnel can also be interviewed to establish the level of assurance.	☒ Yes ☐ No

5	Risk associated to verify that reported GHG emission data is sufficiently supported by evidence.	The identified risk can be mitigated during remote interview by asking complete set of data for the monitoring period and Information provided in the monitoring report can be cross-checked with other sources such as electricity/heat sales receipts/log. To check whether, calculations of baseline emissions and emission reduction has been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology. Furthermore, appropriate/correct emission factor value has been applied or not.	☒ Yes ☐ No
6	Any outstanding FAR(s)/pending issue(s) since the previous physical site visit.	The identified risk is mitigated by reviewing the previous Verification report and found that no FAR is raised during last Monitoring Period.	☒ Yes ☐ No
7	Any gaps in monitoring data, if any, that cannot be justified as per applicable requirements.	As per the shared data no such gap exists for the proposed monitoring period.	☒ Yes ☐ No
8	Any design change(s)/temporary deviation(s) since the previous physical site visit.	The identified risk is mitigated by reviewing the previous verification report and found that design change is not available.	☒ Yes ☐ No

C.3. Interviews

Interviews of borehole user was taken by a Verification team. All surveys were conducted in person and photos of end users with photo IDs and GPS coordinates were taken as records. Submitted photos, snapshots, and ER sheets maintained of the site survey were checked by the verification team to confirm.

In line with the VV plan, the VVB team has interviewed the CME team members involved in the survey and the end users.

No.	Name	Organization	Date	Topic	Team member
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/1/	María Jiménez Nanhekhan	CO2 Balance UK limited	01/02/2023-02/02/2023	•Discussion on the stated goal and policy of the PoA. •Discussion on the sustainability, environmental impact, local stakeholders meeting procedure, baseline scenario, additionality, monitoring plan, Start date • Discussion on the GS registered VPA-DDs, eligibility criteria and its compliance, ongoing financial need, SDG impact, eligibility criteria for, safeguarding principles, stakeholder consultations and grievance mechanism in line with GS4GG, requirements.	Harish Sharma, Shalini Yadav, Jyoce Msoni
/2/	Nyrenda Peter	In country partner (ROCS)	01/02/2023-02/02/2023	Discussion on the stated goal and policy of the PoA. •Discussion on the sustainability, environmental impact, local stakeholders meeting procedure, baseline scenario, additionality, monitoring plan, Start date Discussion on the GS registered VPA-DDs, eligibility criteria and its compliance, ongoing financial need, SDG impact, eligibility criteria for, safeguarding principles, stakeholder consultations and grievance mechanism in line with GS4GG, requirements.	Harish Sharma, Shalini Yadav, Jyoce Msoni

List of HH surveyed by VVB.

Sl. no	Borehole ID	Name of interviewee	Date	Sample category	Audit team member
/01/	LUN049	DAVIS NYIRONGO	01/02/2023-02/02/2023	Project/ Usage survey	Harish Sharma/Shalini Yadav/ Joyce Msoni
/02/	LUN015	ROSTER BANDA	01/02/2023-02/02/2023	Project/ Usage survey	Harish Sharma/Shalini Yadav/ Joyce Msoni
/03/	LUN017	EDWIN CHIRWA	01/02/2023-02/02/2023	Project/ Usage survey	Harish Sharma/Shalini

					Yadav/ Joyce Msoni
/04/	LUN017	TIBALENGA	01/02/2023-02/02/2023	Project/ Usage survey	Harish Sharma/Shalini Yadav/ Joyce Msoni
/05/	LUN013	EMMUNUEL MITI	01/02/2023-02/02/2023	Project/ Usage survey	Harish Sharma/Shalini Yadav/ Joyce Msoni
/06/	LUN049	NYIRENDRA JAMES	01/02/2023-02/02/2023	Project/ Usage survey	Harish Sharma/Shalini yadav/ Joyce Msoni
/07/	LUN017	MPHANDE BANDA	01/02/2023-02/02/2023	Project/ Usage survey	Harish Sharma/Shalini Yadav/ Joyce Msoni
/08/	LUN017	CHIZA MOYO	01/02/2023-02/02/2023	Project/ Usage survey	Harish Sharma/Shalini Yadav/ Joyce Msoni

A single borehole is used by multiple households. Hence more than one HH is interviewed for a single borehole.

C.4. Sampling approach

As the target population is homogeneous, PP has proposed a simple random sampling plan using 90/30 as confidence/precision. This is in line with the applied methodology TPDDTEC version 03.1 /B01/. The sample size for each parameter is determined following guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0 (EB86, Annex 4) /B04-b/.

In line with paragraph 26 of the Sampling and surveys for CDM project activities and programmes of activities, version 09 /B04-a/, the verification team has applied acceptance sampling approach through remote interviews on the monitoring survey as part of verification. The project participant had applied sampling approach /03/, conducted by the representatives of project participant. The verification team has chosen acceptance sampling in accordance with paragraph 28 of the Sampling and surveys for CDM project activities and programmes of activities /B04-a/.

Applying paragraph 39 (c) of the Sampling and surveys for CDM project activities and programmes of activities, version 09 /B04-a/, a sample size of 8 households was chosen (with no discrepant records). A sample size of 8 was determined, based on an AQL of 0.5% and UQL of 20%; producer risk 5% and consumer risk of 20 % each in determining the VVB's sample size Acceptance number (c) thus determined for the sample is 0. However, VVB interviewed 8 samples from the baseline survey done by project participants.

The information provided in the monitoring survey, has been cross checked during the remote interview. As a part of acceptance sampling, the Verification team could confirm the monitoring survey data with no discrepant records. Thus, PP's set of records has been accepted in line with § 33 of the Sampling and surveys for CDM project activities and programmes of activities, version 09 /B04-a/.

Parameter	Verification approach	Population (for VVB's sample)	VVB's Sample Size
Usage surveys	ASP	114	8
Monitoring surveys	ASP	114	8
WCFT	ASP	36	8

The details of the sample interviewed are listed in section C.3 (under the list of interviewed persons). No discrepancy was found in any of the 8 samples and thus $c=0$, i.e., no discrepant records were observed. Thus, PP's set of records has been accepted in line with §33 of the Sampling and surveys for CDM project activities and programmes of activities (version 09.0) /B04-a/. For the impact parameters, questionnaire was prepared and was used during the survey by the PP. During the remote interviews, the verification team cross-checked these sample documents, and no discrepancies were found in the impact parameters as well. Furthermore, the training and competency of the personnel, who conducted such test were checked. They were also interviewed to ensure that the process, method used, and their competency to confirm such standardised test were appropriately applied. The sampling technique to draw such samples were found adequate and the sample collectors were found competent to perform the personnel interviewed.

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

The VVB has raised 04 clarifications (CLs), 22 corrective action requests (CARs) and 00 FARs are raised and closed successfully. Detail list of findings as provided in Appendix 4 of this document.

SECTION D. Verification findings

D.1. Remaining forward action requests from validation and/or previous verifications

Not Applicable

D.2. Compliance of the project implementation and operation with the registered project design document

Means of verification	Document Review, Interview
Findings	CAR 16 , 17 and 20 has been raised during this verification and closed successfully
Conclusion	The verification team confirms that the latest available version of the monitoring report template has been used and the MR is in compliance with the monitoring report form and related monitoring report template guide. As verified from remote interview the audit team confirms the project implementation and operation complies with the project design document /B03/. The starting date of operation are 18/06/2020 (commissioning of first water point rehabilitation)/05/ which is confirmed from the registered VPA-DD /B03/ and validation report. The project boundary in the registered VPA-DD /B03/ is in line with the actual project boundary. Verification team confirms that the project water point systems are operational through remote interview with end users. Each water point system has a unique identification number that was provided in the end user agreement /05/and are correct according to the project database. Each water point is also physically marked with its unique identification number. Along with the serial number, the boreholes technology, end username, address, commissioning date etc. had also been noted which were found to be consistent during remote interview. It is noted that no changes have been observed or identified, that may impact the additionality. No addition of component nor extension of technology, no addition nor removal of project sites, no change of values of the actual operational parameter relevant to determination of emission reductions which are within the control of the PP; no change has been observed or identified that may impact the scale of the project activity or applicability of baseline and monitoring methodology. Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC) v.1 . /B01/. Verification team based on review of MR /01/ and provided evidence confirms that the households/end users relinquish their right of carbon credits./05/ Furthermore, the water point implemented under the project is uniquely identified, thus avoiding

	any potential double counting. As verified through document review and remote interviews, the project implementation and operation, all physical features of the project comply with the project design document /B03/. Verification team has checked the information in the monitoring report /01/ and compared it against the registered VPA-DD /B03/ and found to be consistent. Verification team confirms that: a) The project activity is implemented as per registered VPA DD/B03/. b) The actual operation of the proposed project activity is in line with the registered/revised VPA DD /B03/. c) It has reviewed the registered VPA DD /B03/ including the monitoring plan, the applied monitoring methodology and found that the final MR/01/ for this monitoring period is in line with all the above-mentioned documents. Verification team of CCIPL based on review of records and remote interviews confirms that a robust and effective grievance/12/redressal mechanism is in place and however, no grievances/12/ were reported during the monitoring period. In summary, the monitoring period is reasonable, and the operation of the project activity is in accordance with the registered/revised VPA-DD /B03/. In line with the paragraph 9.4.18 to 9.4.24 of the GS Validation and Verification standard /B04-c/. Verification team confirms that the frequency of calibration monitoring equipment is checked/assured from the certified VPA-DD /B03/.
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D.3. Post-registration changes

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Not applicable

D.3.1. Corrections

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Not applicable

D.3.2. Changes to the start date of the crediting period

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Not applicable

D.3.3. Inclusion of a monitoring plan

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Not applicable

D.3.4. Permanent changes from registered monitoring plan, or permanent deviation of monitoring from the applied methodologies, standardized baselines or other methodological regulatory documents

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Not applicable

D.3.5. Changes to the project design

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Not applicable

D.3.6. Changes specific to afforestation and reforestation project activities.

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Not applicable

D.4. Compliance of the registered monitoring plan with applied methodologies, applied standardized baselines, and other applied methodological regulatory documents.

Means of verification	Document Review, Interview
Findings	CAR 05, has been raised during this verification and has been closed successfully
Conclusion	The verification team has checked the actual monitoring plan against the registered monitoring plan and monitoring methodology /B01/ and applicable tools /B12/. Furthermore, the verification team has checked monitoring system by means of comparison with the information given in the monitoring plan and monitoring methodology. The monitoring plan is completely in accordance with the approved methodology /B01/ applied by the registered VPA-DD/B03/.

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

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

Means of verification	Document Review, Interview
Findings	No finding raised.
Conclusion	Verification team confirms that the data and parameters fixed ex ante are in compliance with the registered VPA-DD /B03/ and monitoring plan. Please refer to the Annex 1.

D.5.2. Data and parameters monitored.

Means of verification	Document Review, Interview
Findings	CAR19 has been raised during this verification and successfully closed.
Conclusion	The verification team confirms that the data and parameters monitored are in compliance with the registered VPA-DD /B03/ and the monitoring plan. It is confirmed that the verification team assessed the data / information flow from the point of monitoring to emission reduction calculation and found no gap in the same. Please refer to the Annex 2.

D.5.3. Implementation of sampling plan

Means of verification	Document Review, Interview
Findings	CAR15 has been raised during this verification and closed successfully.
Conclusion	The verification team has checked the sampling plan and considered appropriate for all the surveys and field tests done: Project Survey, Water Consumption Field Test (WCFT), Water Quality Tests (WQT), and Annual Usage Survey. The parameters assessed during the sampling are : 1) Usage rate in project scenario (Up,y) 2) Quantity of safe water supplied in the project scenario (Qp,y) 3) Quantity of safe water boiled in the project scenario ($Qp, cleanboil,y$) 4) The raw of unsafe water that is still boiled after installation of the water treatment technology (Qp, raw,y) 5) Project time spent collecting water and firewood per household per trip. (TPy) 6) 7) Uses of time saved which was previously spent on water collection.(TRy) 8) WASH training In accordance with the Gold Standard methodology “Technologies and Practices to Displace Decentralized Thermal Energy Consumption” (TPDDTEC v1), survey samples are randomly selected from the user record using a random sample group (RSG). A random number generator ranks the unique serial numbers of the boreholes in the project, generating the RSG which satisfies 90/30 precision.

	Each user in the RSG is assigned a unique random number from which survey participants are selected in accordance with the minimum sample size and confidence requirement for each survey. The RSG and survey participants are reselected for every monitoring period to ensure the selection remains random. The project proponent has elected to cross-sample technologies across all its homogenous water points VPAs located within the project area. Sampling method: Simple random sampling method is adopted as the target population is homogeneous. The sample size is determined by the requirement to achieve 90/30 precision, in line with the methodology for annual survey. Sampling approaches followed the GS4GG Methodology “Technologies and Practices to Displace Decentralized Thermal Energy Consumption” (TPDDTEC), project surveys carried out using representative and random sampling. The sample size is determined in line with the methodological minimum sample size and confidence requirements.. The sample size included all households and was randomly sampled from a list of all the project water point system in the project and in line with the minimum sample size requirements as defined by the methodology and certified VPA -DD. Project proponent had selected 114 users for the Project Survey and Usage Survey and 36 users were randomly selected for WCFT. Acceptance sampling method has been adopted by the VVB for verification. Applying paragraph 39 (c) of the Sampling and surveys for CDM project activities and programmes of activities, version 09 /B04-a/, a sample size of 8 households was chosen (with no discrepant records). A sample size of 8 was determined, based on an AQL of 0.5% and UQL of 20%; producer risk 5% and consumer risk of 20 % each in determining the VVB's sample size Acceptance number (c) thus determined for the sample is 0. However, for acceptance sampling, VVB has interviewed 08 respondents which were subjected to both Project/usage survey and WCFT as resulted in an acceptance sample of 08 for the Project/usage survey and 8 for the WCFT. Please refer to the table in section C.3 which lists the households surveyed by VVB for the random sampling. For the usage and project surveys, 8 users were interviewed, while 8 respondents were interviewed from the WCFT list.
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D.6. Compliance with the calibration frequency requirements for measuring instruments.

Means of verification	Document Review, Interview
Findings	NA
Conclusion	N/A since there is no monitoring equipment which require calibration as per the monitoring plan. The tool used for the monitoring consists of reviewing the documents and remote interviews.

D.7. Assessment of data and calculation of emission reductions or net removals

D.7.1. Calculation of baseline GHG emissions or baseline net GHG removals by sinks

Means of verification	Document Review, Interview
Findings	No Finding Raised
Conclusion	Baseline Emission: $BE_{b,y} = B_{b,y} * ((fNRB_y * EF_{b,fuel,co2}) + EF_{b,fuel,nonco2}) * NCV_{b,fuel}$ Where: $B_{b,y} = N_{p,y} * P_{b,y} \quad (4)$

Where:

$N_{p,y}$: Project technology-days in the project database for project scenario p through year y

$P_{b,y}$: Specific fuel consumption for an individual technology in baseline scenario b during year y converted to tons/day

$BE_{b,y}$: - Emissions for baseline scenario b during the year y in tCO_{2e}

$B_{b,y}$: - Quantity of fuel consumed in baseline scenario b during year y, in tons, as per by-default factors.

GS ID	Bby
GS7456	2,309
GS7457	1,676
GS7458	1,984
GS7459	1,817
GS7460	1,495

$fNRB_y$: - Fraction of biomass used during year y for the considered scenario that can be established as non-renewable biomass ($fNRB=0.89$ default value from CMD tool 30 version 03 has been considered.)

$NCV_{b,fuel}$: - Net calorific value of the fuel that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/ton)

$EF_{b,fuel,CO_2}$: - CO₂ emission factor of the fuel that is substituted or reduced. 112 tCO₂/TJ for Wood/Wood Waste

$EF_{b,fuel,nonCO_2}$: - Non-CO₂ emission factor of the fuel that is substituted or reduced ($EF_{b,fuel,nonCO_2}= 9.46$ This value corresponds with updated AR5 GWP value)

The baseline GHG reduction $BE_{b,y}$ ²=

GS ID	BEby (2021)	BEby (2022)	Total BEby
GS7456	1440	2367	3807
GS7457	594	2148	2742
GS7458	874	2371	3245
GS7459	636	2334	2970
GS7460	476	1651	2127

The verification team confirms that the calculation of $BE_{b,y}$ is in accordance with the applied methodological equation and the registered VPA-DD/B03/. Calculations have been checked and confirmed from the ER spread Sheet /02/.

D.7.2. Calculation of project GHG emissions or actual net anthropogenic GHG removals by sinks

Means of verification	Document Review, Interview
Findings	No finding raised

² Beby values applicable for Monitoring Period 1 i.e, 06/10/2020-06/10/2022 (24 Months)

Conclusion

Project Emission:

$$PE_{p,y} = B_{p,y} * ((fNRB_y * EF_{p,fuel,co2}) + EF_{p,fuel,nonco2}) * NCV_{p,fuel} \quad \text{Where:}$$

$$B_{p,y} = (1 - C_j) * N_{p,y} * W_{p,y} * (Q_{p,rawboil,y} + Q_{p,cleanboil,y})$$

Where:

$N_{p,y}$: Project technology-days in the project database for project scenario p through year y

VPA NO	PTDs
GS7456	667172
GS7457	569066
GS7458	673717
GS7459	616964
GS7460	507650

C_j : Expressed as a percentage, the portion of users of the project technology j who in the baseline were already consuming safe water without boiling it. ($C_j=0.0182$ fraction)

$W_{p,y}$: Quantity of wood fuel or fossil fuel that is used to treat 1 litre of water in the project scenario p during year y. ($W_{p,y}=0.0004$ T/L)

$Q_{p, rawboil,y}$: The raw of unsafe water that is still boiled after installation of the water treatment technology. ($Q_{p, rawboil,y}=0$)

$Q_{p,cleanboil,y}$: Quantity of safe water boiled in the project scenario p during the year y using the zero or low emissions clean water supply technology. ($Q_{p,cleanboil,y}=7.44$ L/pd)

$PE_{p,y}$: - Emissions for project scenario p during the year y in tCO₂e

$B_{p,y}$: - Quantity of fuel consumed in project scenario p during year y, in tons, as derived from the statistical analysis conducted on the data collected during the project performance field tests (cases when no baseline performance field test are performed, e.g. by-default baseline factors).

The value of $B_{p,y}$ is equal to zero as the Quantity of raw or unsafe water that is still boiled after installation of the water treatment technology and Quantity of safe water boiled in the project scenario p during the year y using the zero or low emissions clean water supply technology are zero.

$f_{NRB,y}$: - Fraction of biomass used during year y for the considered scenario that can be established as non-renewable biomass

$NCV_{p,fuel}$: - Net calorific value of the project fuel (IPCC default for wood fuel, 0.0156 TJ/ton). This is equal to the baseline fuel NCV in projects which use the same fuel

$EF_{p,fuel,co2}$: - CO₂ emission factor of the project fuel. This is equal to the baseline fuel EF in projects which use the same fuel, 112 tCO₂/TJ for Wood/Wood Waste

$EF_{p,fuel,nonco2}$: - Non-CO₂ emission factor of the project fuel. This is equal to the baseline fuel EF in projects which use the same fuel.

Project Emission (PE) = 0 tCO₂e for all VPAs

The project of activity is a Improved Kitchen Regimes Multi- Country project which involves no project emission. Furthermore, this is in line with the

applicable applied methodology, Technologies and Practices to Displace
Decentralized Thermal Energy Consumption (TPDDTEC) v.1

D.7.3. Calculation of leakage GHG emissions

Means of verification	Document Review, Interview
Findings	No finding raised
Conclusion	This project is not marketing efficient technology; it is eliminating the need for a fuel-based technology to deliver pure water. Lower emission technology substitution within households is therefore not possible and this leakage source can therefore be discounted. So, it is established that the leakage for this project is zero reference Annex 2,

D.7.4. Summary calculation of GHG emission reductions or net anthropogenic GHG removals by sinks

Means of verification	Document Review, Interview																												
Findings	No finding raised																												
Conclusion	When the baseline fuel and the project fuel are the same and the baseline emission factor and project emission are considered the same, the overall GHG reductions achieved by the project activity in year y are calculated as follows: $ER_y = \sum_{b,p} (N_{p,y} * U_{p,y} * P_{p,b,y} * NCV_{b, fuel} * (fNRB_{b, y} * EF_{fuel, CO2} + EF_{fuel, nonCO2})) - \sum LE_{p,y}$ $ER_y = (\sum BE_{b,y} - \sum P_{p,y}) * U_{p,y} - \sum LE_{p,y}$ Where: $\sum_{b,p}$: - Sum over all relevant (baseline b/project p) couples $N_{p,y}$: - Cumulative number of project technology-days included in the project database for project scenario p against baseline scenario b in year y $U_{p,y}$: - Cumulative usage rate for technologies in project scenario p in year y, based on cumulative adoption rate and drop off rate revealed by usage surveys (fraction) $P_{p,b,y}$: - Specific fuel savings for an individual technology of project p against an individual technology of baseline b in year y, in tons/day, as derived from the statistical analysis of the data collected from the field tests $fNRB_{b, y}$: - Fraction of biomass used in year y for baseline scenario b that can be established as non-renewable biomass (drop this term from the equation when using a fossil fuel baseline scenario) $NCV_{b, fuel}$: - Net calorific value of the fuel that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/ton) $EF_{b, fuel, CO2}$: - CO₂ emission factor of the fuel that is substituted or reduced. 112 tCO₂/TJ for Wood/Wood Waste, or the IPCC default value of other relevant fuel $EF_{b, fuel, nonCO2}$: - Non-CO₂ emission factor of the fuel that is reduced $LE_{p,y}$: - Leakage for project scenario p in year y (tCO_{2e}/yr) As mentioned in section D.7.1, D.7.2 and D.7.3 above, the resulted emission reduction for the monitoring period is see the below table. <table><tr><th>VPA NO</th><th>2021 vintage</th><th>2022 vintage</th><th>VERs</th></tr><tr><td>GS7456</td><td>1343</td><td>2207</td><td>3550</td></tr><tr><td>GS7457</td><td>558</td><td>2018</td><td>25765</td></tr><tr><td>GS7458</td><td>820</td><td>2230</td><td>3050</td></tr><tr><td>GS7459</td><td>597</td><td>2195</td><td>2792</td></tr><tr><td>GS7460</td><td>447</td><td>1851</td><td>2298</td></tr><tr><td>TOTAL EMISSION REDUCTION</td><td>3765</td><td>10501</td><td>14266</td></tr></table> The verification team confirms that the emission reduction calculations provided in the spreadsheet /02-c/ have been verified to be correct and in line with the registered VPA-DD /B03/.	VPA NO	2021 vintage	2022 vintage	VERs	GS7456	1343	2207	3550	GS7457	558	2018	25765	GS7458	820	2230	3050	GS7459	597	2195	2792	GS7460	447	1851	2298	TOTAL EMISSION REDUCTION	3765	10501	14266
VPA NO	2021 vintage	2022 vintage	VERs																										
GS7456	1343	2207	3550																										
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GS7458	820	2230	3050																										
GS7459	597	2195	2792																										
GS7460	447	1851	2298																										
TOTAL EMISSION REDUCTION	3765	10501	14266																										

D.7.5. Comparison of actual GHG emission reductions or net anthropogenic GHG removals by sinks and SDG impact estimates in registered PDD

Means of verification	Document Review, Interview		
Findings	No Finding Raised		
Conclusion	The ex-ante estimate value of the emission reductions for the monitoring period as per the registered VPA-DD /B03/ is 50,000 tCO ₂ e and the actual total resulted emission reduction for the monitoring period is14,266 tCO ₂ e Refer the table in section D.7.4		
			</

D.7.6. Remarks on difference from estimated value in registered PDD

Means of verification	Document Review, Interview
Findings	
Conclusion	The ex-ante estimate value of the emission reductions for the monitoring period as per the registered VPA-DD /B03/ is 50,000 tCO₂e it is based on capping of each VPA @ 10,000 tCO₂e and the actual emission reductions achieved for the monitoring period Refer the table in section D.7.4 Ex-antes applied a conservative usage rate of 90%, whereas actual data shows usage is higher (capped at 95%). The estimated value (10,000 tCO₂e per VPA) is the same for the GS7580-85 as they are capped.

³ VERs values is applicable for 1 Annual years (12Months)

D.7.7. Remaining FAR from previous verification with VVB assessment

Not applicable

SECTION E. Internal quality control

The final Verification report passed a technical review before being submitted to the Gold Standard. The technical review is performed by a technical reviewer qualified in accordance with CCIPL's qualification scheme for GS Validation and Verification.

SECTION F. Verification/Certification opinion

Carbon Check (India) Private Ltd. (CCIPL) has performed the 3rd periodic verification of the registered GS PoA title: Improved kitchen Regimes Multi-Country (1247)

“GS1247 VPA 190 The Zambia Eastern Province Safe Water (GS7456)

GS1247 VPA 191 The Zambia Eastern Province Safe Water (GS7457)

GS1247 VPA 192 The Zambia Eastern Province Safe Water (GS7458)

GS1247 VPA 193 The Zambia Eastern Province Safe Water (GS7459)

GS1247 VPA 194 The Zambia Eastern Province Safe Water (GS7460)”

The verification team assigned by the VVB concludes that the project activity as described in the VPA-DD /B03/ and the Monitoring report /01/, meets all relevant requirements of the Gold Standard. The verification has been conducted in-line with the GS4GG requirements project activities /B02/.

Verification methodology and process

The Verification team confirms the SOW is signed /10/ between the VVB, Carbon Check (India) Private Ltd. And the Project Participant. The team assigned to the verification meets the CCIPL's internal procedures including the UNFCCC/GS requirements for the team composition and competence. The verification team has conducted a thorough contract review as per UNFCCC and CCIPL's procedures and requirements.

The verification has been performed as per the requirements described in the GS4GG and constitutes the review and completion of the following steps:

- Reviewing the VPA-DD /B03/, including the monitoring plan and the corresponding validation report;
- Desk review of the MR /01/ and other relevant documents including documents related to the project activities in emission reductions.
- Review of the applied monitoring methodology “Technologies and Practices to Displace Decentralized Thermal Energy Consumption” Version 3.1 /B01/;
- Remote inspection (01/02/2023-02/02/2023)
- Resolution of CARs and CLs raised during verification.
- Issuance of Verification Report

The project activity was correctly implemented according to selected monitoring methodology /B01/, monitoring plan and the registered VPA-DD /B03/. The monitoring system was installed, maintained in a proper manner, while collected monitoring data allowed for the verification of the amount of achieved GHG emission reductions. Through the document review, the verification team confirms that the project activity has resulted in the total of 14,266tCO₂e emission reductions (Refer the table in section D.7.4) during the reported monitoring period /01/.

This statement covers verification period from 16/08/2021-15/08/2022(including both the dates).

The VVB has raised 04 clarifications, 22 corrective action requests and no forward action requests all of which are raised and closed successfully.

The VVB considers necessary to give reasonable assurance that reported GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology and the monitoring plan contained in the registered VPA-DD /B03/ are fairly stated.

The VVB, hereby certifies that the project activity, achieved emission reductions by sources of GHG equal to (Refer the table in section D.7.4) 14,266 tCO₂e equivalent and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records.

Appendix 1. Abbreviations

Abbreviations	Full texts
ASP	Acceptance Sampling Plan
BE	Baseline Emissions
CA	Corrective Action/ Clarification Action
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Ltd.
CDM	Clean Development Mechanism
CH ₄	Methane
CL	Clarification Request
CO ₂	Carbon Dioxide
CO _{2e}	Carbon Dioxide Equivalent
CTF	Carbon Transfer Form
EB	Executive Board
EF	Emission Factor
FA	Final Approval
FAR	Forward Action Request
FVR	Final Verification Report
GHG	Greenhouse gas(es)
GS	Gold Standard
GS4GG	Gold Standard for the Global Goals
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
LE	Leakage Emissions
MP	Monitoring Period
MR	Monitoring Report
NA	Not Applicable
PE	Project Emissions
PP(s)	Project Participant(s)
PRC	Post registration change
PTD	Project Technology Days
QC/QA	Quality Control/ Quality Assurance
RCF	Repair Confirmation Form
TA	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VER	Verified Emission Reduction
VVB	Validation & Verification body
VVS	Validation and Verification Standard
WCFT	Water Consumption Field Test
WQT	Water Quality Test
SOW	Scope of Work
VV Plan	Validation and verification plan
SDG	Sustainable Development Goal

Appendix 2. Competence of team members and technical reviewers

**Carbon**
CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Mr. Harish Sharma

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC 14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

☒ Validator

☒ Verifier

☒ Team Leader

☒ Technical Expert

☐ Technical Reviewer

☐ Health Expert

☐ Gender Expert

☐ Plastic Waste Expert

☒ SDG+

☒ Social no-harm(S+)

☒ Environment no-harm(E+)

☐ CCB Expert

☐ Financial Expert

☒ Local Expert for India

in the following Technical Areas:

☒ TA 1.1

☒ TA 1.2

☐ TA 2.1

☒ TA 3.1

☐ TA 4.1

☐ TA 4. n

☐ TA 5.1

☐ TA 5.2

☐ TA 7.1

☐ TA 8.1

☐ TA 9.1

☐ TA 9.2

☐ TA 10.1

☒ TA 13.1

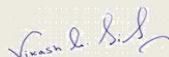
☐ TA 13.2

☐ TA 14.1

☐ TA 15.1

Issue Date
1st January 2023

Expiry Date
31st December 2023


Mr. Vikash Kumar Singh
Compliance Officer


Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023



Carbon Check (India) Private Limited

Certificate of Competency

Joyce Msoni

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

- | | | | |
|---|---|--|---|
| ☐ Validator | ☐ Verifier | ☐ Team Leader | ☐ Technical Expert |
| ☐ Technical Reviewer | ☐ Health Expert | ☐ Gender Expert | ☐ Plastic Waste Expert |
| ☐ SDG+ | ☐ Social no-harm(S+) | ☐ Environment no-harm(E+) | ☐ CCB Expert |
| ☐ Financial Expert | ☒ Local Expert for Zambia | | |

in the following Technical Areas:

- | | | | | |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| ☐ TA 1.1 | ☐ TA 1.2 | ☐ TA 2.1 | ☐ TA 3.1 | ☐ TA 4.1 |
| ☐ TA 4. n | ☐ TA 5.1 | ☐ TA 5.2 | ☐ TA 7.1 | ☐ TA 8.1 |
| ☐ TA 9.1 | ☐ TA 9.2 | ☐ TA 10.1 | ☐ TA 13.1 | ☐ TA 13.2 |
| ☐ TA 14.1 | ☐ TA 15.1 | | | |

Issue Date
03rd May 2023

Mr. Vikash Kumar Singh
Compliance Officer

Expiry Date
02nd May 2024

Mr. Amit Anand
CEO



Carbon Check (India) Private Limited

Certificate of Competency

Ms. Indumathi C

has been qualified as per CCIPL's internal qualification procedures in accordance with the requirements of CDM AS (V7.0), ISO/IEC14065:2020, ISO/IEC 17029:2019 and other applicable GHG programs:

for the following functions and requirements:

- | | | | |
|--|--|---|--|
| ☒ Validator | ☒ Verifier | ☒ Team Leader | ☒ Technical Expert |
| ☒ Technical Reviewer | ☐ Health Expert | ☐ Gender Expert | ☐ Plastic Waste Expert |
| ☒ SDG+ | ☒ Social no-harm(S+) | ☒ Environment no-harm(E+) | ☐ CCB Expert |
| ☒ Financial Expert | ☒ Local Expert for India and Sri Lanka | | |

in the following Technical Areas:

- | | | | | |
|--|--|----------------------------------|---|---|
| ☒ TA 1.1 | ☒ TA 1.2 | ☐ TA 2.1 | ☒ TA 3.1 | ☐ TA 4.1 |
| ☐ TA 4. n | ☐ TA 5.1 | ☐ TA 5.2 | ☐ TA 7.1 | ☐ TA 8.1 |
| ☐ TA 9.1 | ☐ TA 9.2 | ☐ TA 10.1 | ☒ TA 13.1 | ☒ TA 13.2 |
| ☐ TA 14.1 | ☐ TA 15.1 | | | |

Issue Date
1st January 2023

Expiry Date
31st December 2023

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CC IPL_FM 7.9 Certificate of Competency_V2.1_012023

Appendix 3. Documents reviewed or referenced

Sr. No.	Document
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/01/	a. Monitoring Report (Version 1, Dated 20/10/2022) b. Monitoring Report (Version 2, Dated 23/01/2023) c. Monitoring Report (Version 3, Dated 24/02/2023) d. Monitoring Report (Version 4, Dated 24/04/2023) e. Monitoring Report (Version 5, Dated 09/05/2023) f. Monitoring Report (Version 6, Dated 22/06/2023) g. Monitoring Report (Version 7, Dated 18/07/2023) h. Monitoring Report (Version 8, Dated 25/07/2023) i. Monitoring Report (Version 9, Dated 01/08/2023) j. Monitoring Report (Version 10 Dated 10/08/2023) k. Monitoring Report (Version 11, Dated 19/09/2023) l. Monitoring Report (Version 12, Dated 21/09/2023)
/02/	a. Combined ERs (Version 1) confidential Dated 20/10/2022) b. Combined ERs (Version 2) confidential Dated 23/01/2023) c. Combined ERs (Version 3) confidential Dated 24/04/2023) d. Combined ERs (Version 4) confidential Dated 22/06/2023) e. Combined ERs (Version 5) confidential Dated 18/07/2023) f. Combined ERs (Version 6) confidential Dated 25/07/2023) g. Combined ERs (Version 7) confidential Dated 01/08/2023) h. Combined ERs (Version 8) confidential Dated 02/08/2023)
/03/	a. Project Survey ROCS MP3_Dated: 01/04/2022 b. Usage Survey boreholes ROCS_ MP3_Dated: 01/04/2022 c. WCFT_Version02_confidential_Dated:01/06/2022 d. Baseline survey V4 dated 01/04/2022
/04/	Records of WQTs report _Ministry of Health zambia _dated :20/02/2022 Reported By: Mrs. Precious Mwanza Sci. Lab. Technologist (0971-795007) Verified by: Mr. Chanda Chama Sci. Lab. Technologist (0963900480)
/05/	CTF Form – Village Administrator and CO ₂ balance UK Ltd
/06/	RCF Form
/07/	Training Records- WASH Training(Maintenance training) Dated 18/02/2022 &19/02/2022
/08/	MP3 Annual Monitoring Random Sample
/09/	Project Annual Report Form dated :08/12/2022
/10/	Contract Details (SOW) – CCIPL and CO ₂ balance UK Ltd dated :24/11/2022
/11/	CO ₂ balance declaration- Section G of the MR
/12/	Grievance logbook CO2 balance.
/13/	MOU between ROCS and CO ₂ balance UK Ltd dated:24/09/2023.
/14/	Household list/Final Baseline survey V4
/15/	Site Images

Background Documents

Ref no.	Reference Document
/B01/	Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC) v.1
/B02/	a. GS4GG Principles & Requirements (version 1.2) b. GS4GG Safeguarding principles & requirements, version 1.2 c. GS4GG Programme of activity requirements, version 1.2 d. GS4GG Community services activity requirements, version 1.2

/B03/	PoA DD for (GS1247 IKR Micro PoA-DD CP2 version15.3 TRACKED Dated 10/10/2022 .pdf) VPA DDs: VPA 190 The Zambia Eastern Province Safe Water (GS7580) _version 4 dated 21.02.20 VPA 191 The Zambia Eastern Province Safe Water (GS7581) _version 4 dated 21.02.20 VPA 192 The Zambia Eastern Province Safe Water (GS7582) _version 4 dated 21.02.20 VPA 193 The Zambia Eastern Province Safe Water (GS7583) _version 4 dated 21.02.20 VPA 194 The Zambia Eastern Province Safe Water (GS7584) _version 4 dated 21.02.20
/B04/	Standards: a. Sampling and surveys for CDM project activities and programmes of activities CDM sampling standard, version 09 . b. Guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities Ver. 4.0. c. GS Validation and Verification standard for project activities, version 01.0
/B05/	IPCC 2006, volume 2, chapter 1
/B06/	Site Visit and Remote Audit Requirements and Procedures, version 1.0
/B07/	IPCC Default emissions factor, EFDB Emission Factor Database.
/B08/	IPCC Default emissions factor: Non-CO ₂ Emissions from Stationary Combustion.
/B09/	Rule Update- Application of TPDDTEC methodology to safe water supply. Publication date: 30/06/2022
/B10/	Weblink: 1. http://cdm.unfccc.int/ 2. https://www.goldstandard.org
/B11/	Template guide for filling out Gold Standard for the Global Goals- Monitoring Report (Version 1.1)
/B12/	CDM- TOOL 30- Calculation of the fraction of non-renewable biomass EB 108, Annex 11 (Version 3.0) - 2020

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

Table 1. FARs from this verification

Not applicable

Table 2. CARs from this verification

CAR ID	01	Section no.	Key project Information (KPI)	Date: 03/01/2023
Description of CAR				

CME to correct the following in Key Project Information	
i) Indexing of the Key Project Information in line as per MR template.	
ii) CME to mention the latest version of the POA DD. iii) Update the title of POA as per the certified POA DD.	
Project participant response	Date: 23/01/2023
PP has corrected.	
Documentation provided by project participant	
NA	
GS VVB assessment	Date: 28/02/2023
VVB has assessed that CME has corrected Indexing of the Key Project Information in line as per MR template, Mentioned the latest version of the POA DD and Updated the title of POA as per the certified POA DD. Hence, CAR is Closed .	

CAR ID	02	Section no.	KPI	Date: 03/01/2023
Description of CAR				
The project title of all VPAs should be same as mentioned in certified VPA-DD.				
Project participant response			Date: 23/01/2023	
All project titles are the same.				
<				

NA	
GS VVB assessment	Date: 25/04/2023
VVB has assessed the updated MR, CME has corrected the project title of all VPAs as per certified VPADD, hence, CAR is closed.	

CAR ID	03	Section no.	KPI	Date: 03/01/2023
Description of CAR				
In Key project information, mention the date when the last Annual report was submitted, CME to also share the last annual report submitted to GS.				
Project participant response				Date: 23/01/2023
PP has attached. The annual report was submitted on 23/12/2022.				
Documentation provided by project participant				
Annual report 23/12/2023				
GS VVB assessment				Date: 28/02/2023
Documents received furthermore, CME's annual report submitted date is not in line with MR, CME to give clarification against it, hence CAR is Open.				
Project participant response				Date: 14/04/2023
R2: The date on the MR matches the date on the Annual Report. This is the date the report was created and completed. However, it wasn't submitted until 23/12/2022.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 25/04/2023
VVB has assessed the updated MR and found that the date of last annual report has been updated to 8/12/2022 which is now consistent with the date mentioned in the annual report, hence, CAR is closed.				

CAR ID	04	Section no.	KPI	Date: 03/01/2023
Description of CAR				
As per template guidance, CME to represent monitoring period as 3rd., moreover, CME to clearly mention whether 3rd monitoring period is applicable to all VPAs. Furthermore, for duration of MP, CME to clarify if the start date and end date of the monitoring period is applicable to all VPAs.				
Project participant response				Date: 23/01/2023
There are currently 106 boreholes in the project, across 5 VPAs. The first 50 boreholes were rehabilitated in 2019, and the next 56 were rehabilitated in 2022. For boreholes 1-50, it is the third monitoring period. For boreholes 51-106, it is the first monitoring period. This has been corrected in the Key Project Information and other relevant sections. The duration of the Monitoring Period has been kept the same, as there are too many dates to fit if we want to include the newly rehabbed boreholes in 2022. "New" boreholes are mixed with "old" ones in the VPAs. However, each borehole only starts crediting from their own rehabilitation date +1, which is specified for each case in the Emission Reductions.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 14/03/2023
The response is not in line with the query raised by VVB, CAR is open.				
Project participant response				Date: 14/04/2023
R2: The third monitoring period is applicable to all VPAs. However, all VPAs also include newly rehabbed borehole, which are in their first Monitoring Period. All VPAs combine boreholes in their third monitoring period and boreholes in their first monitoring period. The start date of the monitoring period is applicable to all VPAs, but not all boreholes within the VPA. The end date of the monitoring period is applicable to all boreholes in all VPAs. This is explained in sections A.4 and B.4 of the Monitoring Report.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 25/04/2023

As 3 rd Monitoring period is applicable for all VPAs and the start and end dates are same for all VPAs, CME to mention the MP3 and Start & End date under relevant KPI section of the MR. # CAR is open.	
Project participant response	Date: 26/04/2023
R3: Monitoring period has been corrected in Key Project Information, as MP3, MP1. The dates are applicable for all VPAs, but not all boreholes were crediting throughout the entire monitoring period (because some were rehabilitated afterwards). Information in the MR is correct.	
Documentation provided by project participant	
NA	
GS VVB assessment	Date: 05/05/2023
The Monitoring period corresponds to the VPA and not to the rehabilitated boreholes, therefore, CME shall report the Monitoring period of VPA only. # CAR is open.	
Project participant response	Date: 09/05/2023
PP has corrected.	
GS VVB assessment	Date: 10/05/2023
The revised monitoring report has been updated citing the correct monitoring period i.e. MP3. CAR #04 is closed	

CAR ID	05	Section no.	KPI	Date: 03/01/2023
Description of CAR				
In Key project information, mention the full title of the applied methodology.				
Project participant response				Date: 23/01/2023
PP has added.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 14/03/2023
VVB has assessed and verified this CAR with the updated MR, hence CAR is closed				

CAR ID	06	Section no.	Table 1	Date: 03/01/2023
Description of CAR				
CME to correct the units/products in table 1 of the MR.				
Project participant response				Date: 23/01/2023
PP has corrected.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 14/03/2023
CME has corrected the units/products in table 1 of the updated MR, hence, CAR is closed				

CAR ID	07	Section no.	Table 2	Date: 03/01/2023
Description of CAR				
In Table 2, amount achieved is mentioned for SDG 13 only, amount achieved to be mentioned for other SDG product vintages too.				
Project participant response				Date: 23/01/2023
The other SDGs cannot be quantified per vintage, as they are not monitored per date. They are monitored for the entire monitoring period.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 14/03/2023

As the amount achieved for SDGs is a variable parameter, hence, the value of SDG parameters shall be provided in Table,2 as within a same monitoring period the SDGs are same so CME may either repeat the values for each vintage or choose to write the SDG amount by merging the column of the table. CAR is open.	
Project participant response	Date: 14/04/2023
R2: PP has corrected Table 2.	
Documentation provided by project participant	
NA	
GS VVB assessment	Date: 25/04/2023
VVB has assessed the updated MR and found that CME has corrected the table 2 by mentioning the amount achieved for all SDG product vintages. Hence, CAR is closed.	

CAR ID	08	Section no.	Table 1	Date: 03/01/2023
Description of CAR				
Throughout the MR, CME to maintain the same nomenclature for mentioning the VPA IDs.				
Project participant response				Date: 23/01/2023
PP has corrected.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 14/03/2023
CME has corrected and maintain the same nomenclature for the VPA IDs throughout the MR, hence CAR is closed.				

CAR ID	09	Section no.	A.1	Date: 03/01/2023
Description of CAR				
In general description section A.1, the repetitive sentences need to be either deleted or rephrased.				
Project participant response				Date: 23/01/2023
PP has corrected.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 28/02/2023
CME has deleted the repetitive sentence in section A.1 hence CAR is closed.				

CAR ID	10	Section no.	A.1	Date: 03/01/2023
Description of CAR				
CME to share the Carbon Transfer Forms signed by the village body or their representative. Additionally, as discussed in section A.1, the agreement with ROCS shall be shared with the VVB verification team.				
Project participant response				Date: 23/01/2023
PP has submitted the Carbon Transfer Forms. The signed agreement with ROCS is contained within the confidential MOU signed between the two parties. This contains sensitive and confidential financial and legal information and therefore cannot be shared with a third party.				
Documentation provided by project participant				
Carbon transfer form				
GS VVB assessment				Date: 28/02/2023
In want of documents VVB is unable to verify the CME's representation provided in section A.1, B.1 and C. Hence CAR is open.				
Project participant response				Date: 14/04/2023
R2: PP has submitted the agreement and blurred out the confidential sections. This proves the relationship between ROCS and CO2balance.				
Documentation provided by project participant				

<i>Carbon transfer form</i>	
GS VVB assessment	Date: 25/04/2023
CME has submitted the signed document which constitutes the agreement between CO2balance UK Ltd. (CO2b) and Reformed Open Community Schools (ROCS) for the implementation of borehole installation, rehabilitation, and maintenance project under the GS framework in eastern province of Zambia. # CAR is closed.	

CAR ID	11	Section no.	A.1	Date: 03/01/2023
Description of CAR				
In General project description of the project section A.1, it is mentioned that In line with Section A.2.1 of the PoA, communities are encouraged to contribute funds for use of the borehole, to encourage community ownership of the borehole and the long-term sustainability of the project. VVB is unable to find section A.2.1 in PoA. Furthermore, the details of community contributions being asked from communities/users need to be updated.				
Project participant response				Date: 23/01/2023
PP has corrected. Communities generally have a Water Resource Committee that is in charge of keeping the logbook updated, the borehole clean, ensuring WASH trainings are passed on, and making minor repairs when needed. They are also in contact with our field staff and communicate with them when a major repair is needed. Because minor repairs are conducted by the Committee, villagers often contribute with funds to make the repair possible.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 14/03/2023
The statement in the MR has been corrected. CAR is closed.				

CAR ID	12	Section no.	A.1	Date: 03/01/2023
Description of CAR				
In section A.1, it is represented that due to fewer user numbers, the maximum number of water points rehabilitated are 10 instead of 7.CME to transparently tabulate the number of water points considered for each VPA individually.				
Project participant response				Date: 23/01/2023
PP has corrected. Exact number of water points for each VPA can be found in the Emission Reductions spreadsheet.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 14/03/2023
VVB has assessed the ER sheet and MR for the exact number of water points are now updated, CAR is closed.				

CAR ID	13	Section no.	A.2	Date: 03/01/2023
Description of CAR				
In section A.2, CME to provide the information allowing the unique identification of each borehole for each VPA.				
Project participant response				Date: 23/01/2023
PP has provided.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 28/02/2023

CME has provided the unique identification number for each borehole in the section A.2. hence CAR is closed.

CAR ID	14	Section no.	A.4	Date: 03/01/2023
Description of CAR				
In section A.4, CP dates are not In line with certified VPA -DD. If the CP start date is incorrect in the VPA DD, the VPA DD must be updated with the correct information, and any change to start date shall be mentioned in section B.2.3 of the MR.				
Project participant response				Date: 23/01/2023
The certified start date at Validation was 14/08/2019. This is the day the first rehabilitation took place. We conservatively use start date +1 to start counting the actual crediting days. However, all VPAs have different crediting start dates because they include boreholes rehabbed on different dates. Each VPA's crediting start date is the start date of their first borehole +1. GS7456: 16/08/2019 GS7457: 16/08/2019 GS7458: 15/08/2019 GS7459: 21/09/2019 GS7460: 15/09/2019 The dates in A.4 are correct.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 14/03/2023
VVB has assessed the response and found that the crediting period start date is as per the dates mentioned in the project page of the GS registry, however, as per the guideline the If the CP start date is incorrect in the VPA DD, the VPA DD must be updated with the correct information, and any change to start date shall be mentioned in section B.2.3 of the MR .CAR is open.				
Project participant response				Date: 14/04/2023
R2: PP has corrected section A.4, in line with the VPA-DD.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 25/04/2023
VVB has assessed the updated MR and found that for 3 VPAs GSID: 7458, 7459 & 7460, the CP start date is not in line with certified VPA hence CAR is open.				
Project participant response				Date: 26/04/2023
R3: PP has corrected the MR.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 05/05/2023
The updates are still missing. # CAR is open.				
Project participant response				Date: 09/05/2023
PP has corrected				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 10/05/2023
VVB has assessed that section A.4 has been updated and the CP start date is now in line with the certified VPA. CAR is closed.				

CAR ID	15	Section no.	C	Date: 03/01/2023
Description of CAR				
CME to provide clarification against random sampling and which method they have considered for generating random numbers. CME is to submit the supporting evidence of the outcome of the random number generator.				

Project participant response	Date: 23/01/2023
PP has attached random sample.	
Documentation provided by project participant	
<i>Random sample list</i>	
GS VVB assessment	Date: 14/03/2023
VVB assessed the random sampling MP3 sheet and found it in line with the requirement, hence, CAR is closed .	

CAR ID	16	Section no.	C	Date: 03/01/2023
Description of CAR				
CME to transparently mention the number of samples households surveyed for water consumption field test (WCFT).				
Project participant response				Date: 23/01/2023
PP has attached random sample. In line with TPDDTEC v.3.1 Annex 4 Section 7 – Minimum sample size of 30 is recommended. Sample size of 40 is used to allow for sample size attrition. First, a sample of boreholes is defined through http://www.raosoft.com/samplesize.html , following a 90-30 confidence level. Then, from the sample size suggested, households are randomized through https://www.randomizer.org/ , and 110 households are randomly selected.				
Documentation provided by project participant				
GS VVB assessment				Date: 14/03/2023
From the response the actual number of water consumption field test (WCFT) conducted are not clear. Furthermore, there is contradiction as sample of 40 and 110 HHs are being claimed. Moreover, the actual number of WCFT conducted need to be updated in section C of the MR. CAR is open.				
Project participant response				Date: 14/04/2023
R2: The sample size for the WCFT was 40 HHs. The sample size for the project survey and usage survey was 110 HHs. This information has been added to section C in the Monitoring Report.				
Documentation provided by project participant				
<i>Random sample list</i>				
GS VVB assessment				Date: 25/04/2023
VVB has assessed the updated MR, WCFT samples have been updated whereas number of HHs sampled for project and usage survey are incorrect in section C. CAR is open.				
Project participant response				Date: 26/04/2023
PP has corrected WCFT sample size in Section C of the MR. Corrections were made for the mentions of project and usage survey – there is no incorrect information as it states we comply with the minimum sample size which is 100 surveys.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 05/05/2023
In the MR it is represented “The annual usage survey is conducted using a minimum sample size of 100 for each technology.”, whereas the actual usage survey was conducted using a sample survey of 122 respondents. CME should correct the misrepresentation. # CAR is Open.				
Project participant response				Date: 09/05/2023
PP has corrected.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 10/05/2023
The statement has been corrected; the usage survey was conducted on a sample size of 122 respondents. CAR is closed.				

CAR ID	17	Section no.	C	Date: 03/01/2023
Description of CAR				
Section C mentioned "WCFT is a survey conducted bi-annually. It was last conducted between 10/06/2022- 22/06/2022, therefore it will next be conducted in 2024." CME to revisit and correct the statement.				
Project participant response				Date: 23/01/2023
PP has corrected.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 14/03/2023
The correction made by CME in the updated MR, Hence, CAR is closed.				

CAR ID	18	Section no.	C	Date: 03/01/2023
Description of CAR				
CME to transparently mention the number of survey samples including sample fraction and standard error (SE).				
Project participant response				Date: 23/01/2023
In line with the TPDDTEC v.3.1, Section 2 and Section 3 the minimum sample size for Monitoring Survey and Usage Survey is 100. 111 household surveys were carried out to allow for sample size attrition. Out of the 50 boreholes to conduct annual monitoring surveys on, a 90% confidence level was used to calculate the sample size, with a 30% margin of error. The sample size recommended by http://www.raosoft.com/samplesize.html , was 7 boreholes, from which 110 households were randomly selected for the Project and Usage Survey, and 40 for the Water Consumption Field Test. More details and snapshots can be found on the Random Sample spreadsheet, which has been attached. There are no methodological requirements in terms of sample fraction and standard error.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 28/02/2023
The response is not in line with the query asked, CAR is open.				
Project participant response				Date: 14/04/2023
R2: For the project survey and usage survey, a sample of 110 was selected. the WCFT survey, a sample For of 40 was selected. The households were selected from a random sample of 7 boreholes, as it's the recommended sample size with a confidence level of 90% and 30% margin of error.				

The relative precision was achieved for both the usage rate and the WCFT result, confirmed by the CDM sample size calculator:

Usage Rate

Input	Value
<u>Actual sample size</u>	122
<u>Sample proportion</u>	0.9300
<u>Standard error of the proportion</u>	0.0231
Precision associated with a proportion	0.0380
Relative precision	4.1%

WCFT

Input	Value
Actual sample size	36
Sample mean	
	19.3000
<u>Sample standard deviation</u>	2.6400
<u>Standard error of the mean</u>	0.4400
<u>t-value</u>	1.6896
Absolute precision	0.7434
Relative precision	3.9%

Documentation provided by project participant

NA

GS VVB assessment

Date: 25/04/2023

CME has addressed the CAR, however same information need to be updated i the relevant section of MR.
CAR is open

Project participant response

Date: 26/04/2023

PP has added tables to section C of the MR.

Documentation provided by project participant

GS VVB assessment

Date: 05/05/2023

The MR is updated with relevant information. #CAR is closed.

CAR ID	19	Section no.	D.2	Date: 03/01/2023
Description of CAR				
CME to share the WASH training records, and maintenance records for the current monitoring period.				
Project participant response				Date: 14/03/2023
PP has submitted.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 14/03/2023
The WASH training details has been shared, the photographic evidence of the WASH training are not provided by the CME, however, during VVB interviews with the respondents the WASH training was confirmed by the users. CAR is closed.				

CAR ID	20	Section no.	C	Date: 03/01/2023
Description of CAR				
As 27 out of 50 boreholes sample failed to meet all requirements within the national standards and underwent professional treatment, CME to share the complete data justifying the time period for which the boreholes were not meeting the desired level of quality, measures taken to improve the quality to meet the desired criteria.				
Project participant response				Date: 23/01/2023
PP has added the dates in the Emission Reductions, in the "Downdays summary" tab. Water Quality Treatment Confirmation Forms have been submitted for more data on measures taken to improve the water quality.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 14/03/2023
The boreholes not meeting the quality standards have been listed under the "Downdays Summary" citing the reason as "WQT failure and reset". After reset the repeated test results are shared and found satisfactory. Furthermore, it is assessed that the number of down days due to WQT failure and reset are not considered in ER estimation, Hence, the CAR is closed .				

CAR ID	21	Section no.	C	Date: 03/01/2023
Description of CAR				
CME to clarify how the Continuous Input and Grievance Mechanism is ensured for stakeholders, what are the means by which a stakeholder can raise a grievance, and how the stakeholders are made aware of the grievance mechanism. Furthermore, CME is to submit the Grievance register/logbook snapshots for this monitoring period.				
Project participant response				Date: 23/01/2023
Stakeholders can get in touch with ROCS or CO2balance at any time to raise a grievance. If they are community members, the easiest way to do this is during the field activities. They can also raise their grievances at any time in the logbook which is held with the Water Resource Committee in each village. Communication channels are reminded in each field activity conducted, and was also reminded by CO2balance team members during our site visit in September 2022. Logbook snapshots have been attached.				
Documentation provided by project participant				
<i>Logbook snapshots</i>				
GS VVB assessment				Date: 14/03/2023
VVB has assessed the continuous grievance mechanism available to the users. The community members are handling and maintaining the grievance logbooks. The logbook snapshot has been shared by the CME. Hence, CAR is closed .				

CAR ID	22	Section no.	C	Date: 03/01/2023
Description of CAR				
CME is to provide a declaration against no legal contests/disputes and grievances received during the current monitoring period.				
Project participant response				Date: 23/01/2023
Grievances are mostly shared in the different visits of the field team when conducting surveys, and recorded in the surveys. They are also recorded in logbooks for which we have provided a sample of pictures. No legal contests/disputes have been received during this monitoring period.				
Documentation provided by project participant				
<i>Logbooks snapshot</i>				
GS VVB assessment				Date: 14/03/2023
CME has provided the sample logbook pictures for the current Monitoring period, furthermore CME to provide written declaration for no legal disputes during this MP with signed and stamp hence CAR is open.				
Project participant response				Date: 23/01/2023
No legal contests/disputes have been received during this monitoring period.				
Documentation provided by project participant				

No legal dispute declaration	
GS VVB assessment	Date: 20/04/2023
CME has provided the declaration against no legal contests/disputes and grievances received during the current monitoring period. CAR is closed.	

Table 3. CL from this verification

CL ID	01	Section no.	Key Project Info (KPI)	Date: 03/01/2023
Description of CL				
CME to clarify why POA-DD version 14 is used, as latest version 15.3 is available on GS registry. Moreover, only the version of the POA -DD to be updated in this section without any reference to title or GS ID.				
Project participant response				Date: 23/01/2023
PP has corrected.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 10/03/2023
VVB has assessed and verified the updated MR, hence the CL is closed .				

CL ID	02	Section no.	Key Project Info (KPI)	Date: 03/01/2023
Description of CL				
As per template guidance, design certification date for each VPA should be mentioned, CME to clarify how they have determined these dates as same is not verifiable from SustainCert database.				
Project participant response				Date: 23/01/2023
There date on the SC App is wrongfully published. The actual Design Certification date is 14/04/2020, which is the date used in all Verification Monitoring Reports. According to the GS Principles & Requirements Section 5.1.23: The date of Design Certification is the last day of the 4 week Design Review period, even if the design review is concluded after this date. Design Certification = 17th March 2020 + 4 weeks = 14th April 2020				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 10/03/2023
As represented by CME the final submission date is 17 th March 2020, Hence, in line with the GS Principles & Requirements Section 5.1.23 the start date 14 th April 2020 is found to be justified, CL is closed .				

CL ID	03	Section no.	KPI	Date: 03/01/2023
Description of CL				
CME to clarify and provide the information communicated for changing the project representative as the same is different from the one represented in certified VPA DD.				
Project participant response				Date: 23/01/2023
Project Representatives are all within CO2balance Ltd. Internally, different staff members work on the project over time and this explains the different project representative names. The methodology does not require for formal communications on this.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 10/03/2023

The response is not in line with the query. CL is open.	
Project participant response	Date: XX/XX/XXXX 14/04/2023
R2: PP has corrected.	
Documentation provided by project participant	
NA	
GS VVB assessment	Date: 25/04/2023
VVB has assessed the updated MR and is now in line with project representative as the same from the one represented in certified VPA DD. CL is Closed.	

CL ID	04	Section no.	A.4	Date: 03/01/2023
Description of CL				
CME clarify how the value of TRy (0.64) is considered. furthermore, CME to mention TRy for each VPAs.				
Project participant response				Date: 23/01/2023
As indicated in the Emission Reductions spreadsheet, under the SDG Impact tab, TRy is calculated as follows: $TRy = (Tb,y - Tp,y) / Tby$				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 28/02/2023
CME has updated the MR mentioning the value is applicable for all VPAs however, in ER Sheet the TRy is calculated using $TRy = (Tb,y - Tp,y)$ only. CL is open.				
Project participant response				Date: 14/04/2023
R2: PP has corrected the MR and ER sheet. The correct equation is $TRy = (Tb,y - Tp,y) / Tby$, in line with the VPA-DD.				
Documentation provided by project participant				
NA				
GS VVB assessment				Date: 25/04/2023
VVB has assessed the updated MR and ER sheet, CME has corrected the equation and value of Try in MR and ER sheet both, hence, CL is closed.				

Annex 1: Assessment of data and parameters fixed ex-ante at the time of validation.

Relevant SDG Indicator	SDG 13 Climate action
Parameter	CO ₂ emission factor arising from use of wood fuel in baseline scenario (EF _{b,co2})
Data unit	tco ₂ /TJ
Default values used	112
Purpose of data	Calculation of the baseline emission
Source of verification of the source	Calculated from IPCC defaults; Volume 2: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2, Table 2.5 https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf

Relevant SDG Indicator	SDG 13. Climate action
Parameter	Non-CO ₂ (CH ₄ and N ₂ O) emission factor arising from use of wood fuel in baseline scenario (EF _{b, non-co2})
Data unit	tco ₂ /TJ
Default values used	9.46
Purpose of data	Calculation of emission reduction
Source of verification of the source	Default emissions factor: https://ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf Global Warming Potential: https://ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf This value corresponds with the updated AR5 GWP value. These values are only applied for 2021 and onwards figures. AR5: - https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf

Relevant SDG Indicator	SDG 13. Climate action
Parameter	CO ₂ emission factor arising from use of wood fuel in project scenario (EF _{p,co2})
Data unit	tco ₂ /TJ
Default values used	112
Purpose of data	Calculation of baseline emissions
Source of verification of the source	Calculated from IPCC defaults; Volume 2: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2, Table 2.5 https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf

Relevant SDG Indicator	SDG 13. Climate action
Parameter	Non-CO ₂ (CH ₄ and N ₂ O) emission factor arising from use of fuel in project scenario (EF _{p,non co2})
Data unit	tco ₂ /TJ
Default values used	8.692

Purpose of data	Calculation of emission reductions
Source of verification of the source	IPCC Default emissions factor, EFDB Emission Factor Database. Accessible: https://www.ipcc-nggip.iges.or.jp/EFDB/main.php

Relevant SDG Indicator	SDG 13. Climate action
Parameter	Non-CO ₂ (CH ₄ and N ₂ O) emission factor arising from use of wood fuel in project scenario (EF _{p,non co2})
Data unit	tco ₂ /TJ
Default values used	9.46
Purpose of data	Calculation of emission reductions
Source of verification of the source	IPCC Default emissions factor, EFDB Emission Factor Database. Accessible: https://www.ipcc-nggip.iges.or.jp/EFDB/main.php This value corresponds with the updated AR5 GWP value. Used for 2021 values. AR5 https://www.ipcc.ch/site/assets/uploads/2018/02/WG1AR5_Chapter08_FINAL.pdf

Relevant SDG Indicator	SDG 13. Climate Action
Parameter	Net calorific value of the wood fuel used in the baseline (NCV _b)
Data unit	TJ/ton
Default values used	0.0156
Purpose of data	Calculation of emission reduction
Source of verification of the source	IPCC default: http://www.ipccnggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf Table 1.2

Relevant SDG Indicator	SDG 13. Climate Action
Parameter	Net calorific value of the wood fuel used in the project (NCV _p)
Data unit	TJ/ton
Default values used	0.0156
Purpose of data	Calculation of emission reduction
Source of verification of the source	IPCC default: http://www.ipccnggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf Table 1.2

Relevant SDG Indicator	SDG 13 (Climate Action), SDG 3.9.1 (Good Health and Well-Being)
Parameter	Quantity of wood fuel that is used to treat 1 litre of water in baseline scenario b during the project year y (W _{b,y})
Data unit	T/litre
Default values used	0.0004
Purpose of data	Calculation of emission reductions and impact on SDG 3.
Source of verification of the source	GS default value

Relevant SDG Indicator	SDG 13. (Climate Action), SDG 6.1.1 (Clean Water and Sanitation)
Parameter	Quantity of wood fuel that is used to treat 1 litre of water project scenario p during project year (W _{p,y})
Data unit	T/litre
Default values used	0.0004

Purpose of data	Calculation of emission reduction
Source of verification of the source	GS default value

Relevant SDG Indicator	SDG 13. (Climate Action), SDG 6.1.1 (Clean Water and Sanitation), SDG 3.9.1 (Good Health and Well-Being)
Parameter	Portion of users of project safe water supply who were already in baseline using a non- boiling safe water supply.(C _j)
Data unit	%
Default values used	1.82%
Purpose of data	Calculation of emission reductions.
Source of verification of the source	Baseline study /08/

Relevant SDG Indicator	SDG 13. Climate action
Parameter	Percentage of premises that in the absence of the project activity would have used non- GHG emitting technologies like chlorine treatment techniques in the project boundary.(X _{boil}) non suppressed demand.
Data unit	%
Default values used	1.82%
Purpose of data	Calculation of emission reductions.
Source of verification of the source	Project Survey./03-a/

Relevant SDG Indicator	SDG 5.2.1 (Gender Equality)
Parameter	Baseline time spent collecting water and firewood per household per trip(T _{b,y})
Data unit	hours
Default values used	2.2 hours
Purpose of data	Calculating time saved collecting water by project.
Source of verification of the source	Baseline survey /03-d/

Relevant SDG Indicator	SDG 3.9.1 (Good Health and Wellbeing)
Parameter	Percentage of persons boiling water for purification in the baseline scenario (P _{b,boil})
Data unit	Percentage
Default values used	16.22%
Purpose of data	Determination of number of persons boiling water in the baseline.
Source of verification of the source	Baseline survey /03-d/

Annex 2: Assessment of data and parameters monitored.

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 13. (Climate Action)
Data / Parameter: (as in monitoring plan of PDD):	Non- renewability status of woody biomass fuel in scenario i during year y (f _{NRB,i,y})
Unit	Fractional non-renewability
Measuring frequency/Time Interval:	Annual

Reported value	fNRB = 0.86
Verified Source of Data	CDM Default stated in following document: untitled (unfccc.int) Calculation of the fraction of non-renewable biomass (fNRB) Zambia CDM Tool 30 EB 108 Annex 11 v3.0 2020
	C4 EcoSolutions authored report supplied with project documentation. March 2021
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 13. (Climate Action)
Data / Parameter: (as in monitoring plan of PDD):	Number of persons consuming water supplied by project scenario p through year y ($N_{p,y}$)
Unit	Project Technology Days
Measuring frequency/Time Interval:	Annual
Reported value	GS7456 – 667172 GS7457 – 569066 GS7458 – 673717 GS7459 – 616964 GS7460 – 507650 Downdays % per VPA: GS7456 – 15.62% (1197 days) GS7457 – 17.77% (1427 days) GS7458 – 11.84% (951days) GS7459 – 18.58% (1424 days) GS7460 – 18.64% (1429 days)
Verified Source of Data	Project Database /03-a/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA

Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 13 (Climate Action), SDG 6. (Clean Water and Sanitation), SDG 3. (Good Health and Wellbeing)
Data / Parameter: (as in monitoring plan of PDD):	Usage rate in project scenario p during year y. ($U_{p,y}$)
Unit	%
Measuring frequency/Time Interval:	Annual
Reported value	99.29% (capped at 95%)
Verified Source of Data	Usage Survey /03-b/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 13. (Climate Action)
Data / Parameter: (as in monitoring plan of PDD):	Quantity of safe water supplied in the project scenario p during the year y using the zero or low emissions clean water supply technology ($Q_{p,y}$)
Unit	Litres per person per day
Measuring frequency/Time Interval:	Biennial (Every 2 years). In MP3 it was conducted between 10/06/2022- 22/06/2022.
Reported value	20.36 (capped at 7.5) as calculated in MP3.
Verified Source of Data	Water Consumption Field Test (WCFT) /03-c/

Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 6 (Clean Water and Sanitation)
Data / Parameter: (as in monitoring plan of PDD):	Quantity of safe water boiled in the project scenario p per person per day using the zero or low emissions clean water supply technology ($Q_{p, \text{cleanboil}, y}$)
Unit	Litres per person per day
Measuring frequency/Time Interval:	Biennial (Every 2 years). In MP3 it was conducted between 10/06/2022- 22/06/2022
Reported value	0
Verified Source of Data	Water Consumption Field Test (WCFT) /03-c/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 6 (Clean Water and Sanitation)
Data / Parameter: (as in monitoring plan of PDD):	The raw of unsafe water that is still boiled after installation of the water treatment technology ($Q_{p, \text{rawboil}, y}$)
Unit	Litres per person per day

Measuring frequency/Time Interval:	biennial (Every 2 year) In MP3 it was conducted between 10/06/2022- 22/06/2022
Reported value	0
Verified Source of Data	Water Consumption Field Test (WCFT) /03-c/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 6 (Clean Water and Sanitation)
Data / Parameter: (as in monitoring plan of PDD):	Quality of Treated Water
Unit	Parameters as per Zambian National Standards
Measuring frequency/Time Interval:	Water quality testing was conducted in partnership with the Zambian Department of Water Resources (DWR). Testing was certified in line with WHO standards. Water samples are taken at the point of source, directly from the boreholes.
Reported value	Pass, In Q1 testing (20/02/2022), 27/50 boreholes failed for various parameters. These boreholes were individually removed from crediting from the start of the monitoring period until they were treated and retested on 10/04/2022, as the previous WQT was in the last monitoring period.
Verified Source of Data	Water Quality Test Report /04/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place

In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA
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Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 13. (Climate Action)
Data / Parameter: (as in monitoring plan of PDD):	Leakage in project scenario p during year y ($LE_{p,y}$)
Unit	tCO ₂ e per year
Measuring frequency/Time Interval:	Biennial
Reported value	0
Verified Source of Data	Baseline and project surveys /03-d&a/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 5. (Gender Equality)
Data / Parameter: (as in monitoring plan of PDD):	Project time spent collecting water and firewood per household per trip. ($T_{p,y}$)
Unit	hours
Measuring frequency/Time Interval:	Annual
Reported value	1.56 Established through questions in the project survey on a representative sample of the end users. In MP3, 1,56 was obtained by adding up average time collecting water per trip + average time collecting fuel per trip. These values can be found in E45 and E132 of the Project Survey.
Verified Source of Data	Project Survey /03-a/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes

Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 5. (Gender Equality)
Data / Parameter: (as in monitoring plan of PDD):	Usage of time saved by the project activity (Tusage)
Unit	%
Measuring frequency/Time Interval:	Annual
Reported value	1. (Unpaid) Domestic work (includes cooking and caring for family members) – 82% 2. Income generating activities – 64% 3. Religious activities – 96% 4. Social and leisure activities – 80% 5. Voluntary activities – 76% 6. Education and training – 48% 7. Other (Specify) – 0%
Verified Source of Data	Project Survey /03-a/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 6. (Clean Water and Sanitation)
Data / Parameter: (as in monitoring plan of PDD):	Number of additional persons having access to safe water in the project activity compared to the baseline scenario (P_{access})
Unit	Number of people

Measuring frequency/Time Interval:	Annual
Reported value	GS7456 - 3776 GS7457 – 3738 GS7458 – 3787 GS7459 – 3787 GS7460 – 4034
Verified Source of Data	Usage Survey /03-b/ ,Household list /14/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 5. (Gender Equality)
Data / Parameter: (as in monitoring plan of PDD):	Total reduction time spent collecting water and firewood for project activity in year y (TR_y)
Unit	%
Measuring frequency/Time Interval:	Annual
Reported value	29.09% (All VPAs GS7456-60)
	$TR_y = T_{b,y} - T_{p,y} / T_{b,y}$ (GS7456-60): $0.64 = (2.2 - 1.56) / 2.2 = 29.09\%$
Verified Source of Data	Project Survey /03-a/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place

In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA
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Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 13 (Climate Action)
Data / Parameter: (as in monitoring plan of PDD):	Community Maintenance Training
Unit	The outcome of meetings
Measuring frequency/Time Interval:	Annual
Reported value	Training was conducted between 03/02/2022 and 07/04/2022 in all project communities from boreholes 1-50. WASH training for newly rehabbed boreholes 51- 106 was conducted post-rehab, between 12/06/2022 and 24/08/2022.
Verified Source of Data	Training records/07/, Project Survey/03-a/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 13 (Climate Action)
Data / Parameter: (as in monitoring plan of PDD):	WASH training
	Community WASH trainings conducted to promote hygiene and sanitation practices for the reduction of cases of water borne diseases
Unit	The outcome of WASH meetings
Measuring frequency/Time Interval:	Annual
Reported value	Training was conducted between 12/06/2022 and 24/08/2022 in all project communities.
Verified Source of Data	Training records/07/, Project Survey/03-a/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes

Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 6 (Clean Water and Sanitation), SDG 3 (Good Health and Wellbeing)
Data / Parameter: (as in monitoring plan of PDD):	Number of persons having access to safe water from the project activity. (P_y)
Unit	Number
Measuring frequency/Time Interval:	Annual
Reported value	GS7456: 4048 GS7457: 4008 GS7458: 4060 GS7459: 4060 GS7460: 4325
Verified Source of Data	Household lists /14/, Usage Survey /03-b/ and WCFT/03-c/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 3 (Good Health and Wellbeing)
Data / Parameter: (as in monitoring plan of PDD):	The number of additional persons consuming safe water in the project activity compared to the baseline scenario. (P_{safe})

Unit	Number
Measuring frequency/Time Interval:	Annual
Reported value	GS7456 – 3793 GS7457 – 3756 GS7458 – 3805 GS7459 – 3805 GS7460 – 4053
Verified Source of Data	Combined ER (version 05) /02/
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Relevant SDG Indicator	SDG 13. (Climate Action)
Data / Parameter: (as in monitoring plan of PDD):	Reported cases of corruption arising from the project activity
Unit	Case communicated.
Measuring frequency/Time Interval:	Continuous
Reported value	No cases of corruption were reported during this monitoring period.
Verified Source of Data	Continuous Grievance Mechanism
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Assessment of details of monitoring equipment, its specification and calibration as per the requirements of registered PDD:	NA
Does the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place
In case only partial data are available because activity levels or non-activity parameters have not been monitored in	NA

accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	
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APPENDIX 7. Assessment of Safeguarding Principles

Safeguarding Principles	Assessment Questions/ Requirements	How Project will achieve Requirements through design, management or risk mitigation.	Verification team assessment
Principle Human Rights	1. 1. The Project Developer and the Project shall respect internationally proclaimed human rights and shall not be complicit in violence or human rights abuses of any kind as defined in the Universal Declaration of Human Rights	NA.	NA.
	2. The Project shall not discriminate with regard to participation and inclusion	NA.	NA.
Principle Gender Equality	2. 1. The Project shall not directly or indirectly lead to/contribute to adverse impacts on gender equality and/or the situation of women (a) Sexual harassment and/or any forms of violence against women – address the multiple risks of genderbased violence, including sexual exploitation or human trafficking.	Not relevant	Not relevant
	(b) Slavery, imprisonment, physical and mental drudgery, punishment or coercion of women and girls.	Not relevant	Not relevant
	(c) Restriction of women's rights or access to resources (natural or economic).	Not relevant	Not relevant
	(d) Recognise women's ownership rights regardless of marital status – adopt project measures where possible to support to women's access to inherit and own land, homes, and other assets or natural resources.	Not relevant	Not relevant.

	2. Projects shall apply the principles of non-discrimination, equal treatment, and equal pay for equal work: (a) Where appropriate for the implementation of a PoA/VPA, paid, volunteer work or community	Equal participation of women and men in decision making is encouraged by promoting their equal membership on water point committees (WPCs). These WPCs are trained to facilitate the	Not relevant
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	contributions will be organised to provide the conditions for equitable participation of men and women in the identified tasks/activities.	participation of members depending on their specific circumstances. They also assist all community members to provide feedback on the project, regardless of their situation.	
	(b) Introduce conditions that ensure the participation of women or men in Project activities and benefits based on pregnancy, maternity/paternity leave, or marital status.	The project aims to benefit the whole community equally and women's equal participation in the LSC and water point committees is encouraged.	Not relevant
	(c) Ensure that these conditions do not limit the access of women or men, as the case may be, to PoA/VPA participation and benefits.	The project encourages equal participation of men and women.	Not relevant
	3. The Project shall refer to the country's national gender strategy or equivalent national commitment to aid in assessing gender risks.	The project reduces the community exposure to water borne illness through the provision of a safe water source, and reduces the risk of household air pollution by removing the need for households to boil water for purification.	Not relevant
	4. (where required) Summary of opinions and recommendations of an Expert Stakeholder(s)	Not relevant	Not relevant

Principle 3. Community Health, Safety and Working Conditions	The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community	The project reduces the community exposure to water borne illness through the provision of a safe water source and reduces the risk of household air pollution by removing the need for households to boil water for purification.	The project involves the rehabilitation of borehole and verification team has done the assessment during remote interviews and found that no incidence of water born disease or illness were happened from the project implementation.
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Principle 4.1 Sites of Cultural and Historical Heritage	Does the Project Area include sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture?	Not relevant	Not relevant
Principle 4.2 Forced Eviction and Displacement	Does the Project require or cause the physical or economic relocation of peoples (temporary or permanent, full or partial)?	Not relevant	Not relevant
Principle 4.3 Land Tenure and Other Rights	Does the Project require any change, or have any uncertainties related to land tenure arrangements and/or access rights, usage rights or land ownership?	Not relevant	Not relevant
Principle 4.4 Indigenous People	Are indigenous peoples present in or within the area of influence of the Project and/or is the Project located on land/territory claimed by indigenous peoples?	NA.	NA.
Principle 5. Corruption	The Project shall not involve, be complicit in or inadvertently contribute to or reinforce corruption or corrupt Projects	Communities involved in the projects are able to communicate any cases of corruption through the continuous input mechanism established for the projects. No instances of corruption have been reported in the monitoring period.	The project involves the rehabilitation of borehole and verification team has done the assessment during remote interviews and crosscheck the grievance logbook records and found users were only charged a nominal maintenance fee therefore, No instances of corruption have been reported in the monitoring period.

Principle 6.1 Labour Rights	1. The Project Developer shall ensure that all employment is in compliance with national labour occupational health and safety laws and with the principles and standards embodied in the ILO fundamental conventions	NA.	NA.
	2. Workers shall be able to establish and join labour organisations	NA.	NA.
	3. Working agreements with all individual workers shall be documented and implemented and include: a. Working hours (must not exceed 48 hours per week on a regular basis), AND b. Duties and tasks, AND	NA.	NA.
	c. Remuneration (must include provision for payment of overtime), AND d. Modalities on health insurance, AND e. Modalities on termination of the contract with provision for voluntary resignation by employee, AND f. Provision for annual leave of not less than 10 days per year, not including sick and casual leave.		
	4. No child labour is allowed (Exceptions for children working on their families' property requires an Expert Stakeholder opinion)	NA.	NA.
	5. The Project Developer shall ensure the use of appropriate equipment, training of workers, documentation and reporting of accidents and incidents, and emergency preparedness and response measures	NA.	NA.

Principle 6.2 Negative Economic Consequences	Does the project cause negative economic consequences during and after project implementation?	Community-orientated trainings on conducting minor maintenance were established at the beginning of the project. All breakdowns are recorded in the monitoring report and average functionality is well above 75%, shows that this initiative has been highly successful.	The project involves the rehabilitation of borehole and verification team has done the assessment during the remote interviews and found that no negative economic consequences were caused due the project implementation.
Principle 7.1 Emissions	Will the Project increase greenhouse gas emissions over the Baseline Scenario?	The project reduces greenhouse gas emissions compared to the baseline scenario.	Not Relevant
Principle 7.2 Energy Supply	Will the Project use energy from a local grid or power supply (i.e., not connected to a national or regional grid) or fuel resource (such as wood, biomass) that provides for other local users?	Not applicable	Not Relevant
Principle 8.1 Impact on Natural Water Patterns/Flows	Will the Project affect the natural or pre-existing pattern of watercourses, groundwater and/or the watershed(s) such as high seasonal flow variability, flooding potential, lack of aquatic connectivity or water scarcity?	Not applicable	Not Relevant
Principle 8.2 Erosion and/or Water Body Instability	Could the Project directly or indirectly cause additional erosion and/or water body instability or disrupt the natural pattern of erosion?	Not applicable	Not Relevant
Principle 9.1 Landscape Modification and Soil	Does the Project involve the use of land and soil for production of crops or other products?	Not applicable	Not Relevant

Principle 9.2 Vulnerability to Natural Disaster	Will the Project be susceptible to or lead to increased vulnerability to wind, earthquakes, subsidence, landslides, erosion, flooding, drought or other extreme climatic conditions?	Not applicable	Not Relevant
Principle 9.3 Genetic Resources	Could the Project be negatively impacted by or involve genetically modified organisms or GMOs (e.g., contamination, collection and/or harvesting, commercial development, or take place in facilities or farms that include GMOs in their processes and production)?	Not applicable	Not Relevant
Principle 9.4 Release of pollutants	Could the Project potentially result in the release of pollutants to the environment?	Not applicable	Not Relevant
Principle 9.5 Hazardous and Non-hazardous Waste	Will the Project involve the manufacture, trade, release, and/ or use of hazardous and non-hazardous chemicals and/or materials?	Not applicable	Not Relevant
Principle 9.6 Pesticides & Fertilisers	Will the Project involve the application of pesticides and/or fertilisers?	Not applicable	Not applicable
Principle 9.7 Harvesting of Forests	Will the Project involve the harvesting of forests?	Not applicable	Not applicable.
Principle 9.8 Food	Does the Project modify the quantity or nutritional quality of food available such as through crop regime alteration or export or economic incentives?	Not applicable	Not Relevant
Principle 9.9 Animal husbandry	Will the Project involve animal husbandry?	Not applicable	Not Relevant
Principle 9.10 High Conservation Value Areas and	Does the Project physically affect or alter largely intact or High Conservation Value (HCV) ecosystems, critical habitats,	Not applicable	Not Relevant

Critical Habitats	landscapes, key biodiversity areas or sites identified?		
Principle 9.11 Endangered Species	Are there any endangered species identified as potentially being present within the Project boundary (including those that may route through the area)? AND/OR Does the Project potentially impact other areas where endangered species may be present through transboundary affects?	Not applicable	Not Relevant

APPENDIX 8: Gold Standard Verification Protocol

CC IPL's Checklist question	Ref.	MoV ⁴	Findings, comments, references, data sources	Draft conclusion	Final conclusion
1. Sustainability Monitoring					
1.1 Have all non-neutral indicators been monitored as per the sustainability monitoring plan?		I,	Yes, all the non-neutral indicators have been monitored as per the sustainability monitoring plan.	OK	OK
1.2 Have the methods to monitor data changed? And are they suitable to the project scale and type?		DR	Methods to monitor data have not changed as compared with the monitoring plan in the registered passport and monitoring plan.	OK	OK

CC IPL's Checklist question	Ref.	MoV ⁴	Findings, comments, references, data sources	Draft conclusion	Final conclusion
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⁴ MoV = Means of Verification, DR = Document Review, I = Interview, www = internet search.

1.3 Has the way of monitoring been followed? With the inclusion of dates and parameters?		I	The sustainability monitoring plan has been followed as described in the Passport.	OK	OK
1.4 Have mitigation measures been put in place to prevent the risk of the violation of the safeguarding principle of the “Do No Harm” assessment or to neutralize a Sustainable Development Indicator that is being monitored?		DR	The POA is the rehabilitation of borehole to the masses and doesn't involve any large set up or organization base that can be qualified as significant for a “Do Not Harm” procedures.	OK	OK
1.5 Has all the data in the Sustainability development matrix been verified and cross-checked against available sources of project data? Has it been described how sustainable development would be affected if a variance occurred?		I	Yes, all data in the sustainability development matrix have been verified and cross-checked from the supporting documents/data and during the remote interview.	OK	OK
2. Other					
2.1 Are there any issues from the previous validation/verification? (ie FARs, requests / approvals for RMP)		DR	No	OK	OK
2.2 Has the project ever received any requests for reviews or incompletes from the UNFCCC or GS Secretariat?		DR	No there are no requests for reviews or incomplete for the project.	OK	OK
2.3 The evaluation of the status of mitigation and compensation measures has been verified.		DR,I	Yes, the status of mitigation and compensation measures has been verified.	OK	OK