Sustainability Verification Report

For

Gold Standard Project Activity

"VPA 6 Kilifi Borehole Rehabilitation Project (GS7128)"
GS ID 7128
by
CO2balance UK Ltd.

VPA 6 Kilifi Borehole Rehabilitation Project (GS7128)

Gold Standard Ref No: GS7128

Monitoring Period:

MP3: 01/07/2021 to 30/06/2022

Report No: CCIPL1643/GS/VER/BRP/20221103

Revision number: 03

Report Date: 29/11/2023

Carbon Check (India) Private Ltd.

Unit No. 1701, Logix City Centre Office Tower, Plot No. BW-58, Sector-32 Noida, Uttar Pradesh

I. PROJECT DATA

Project title:	VPA 6 Kilifi Borehole Rehabilitation Project (GS7128)			
Registration No. / Date:	GS7128 dated 03/10/2019;	Scale:	Small-scale	
Monitoring period:	GS7128 (MP3): 01/07/2021 to 30/06/2022 (Both days inclusive)	**Monitoring Period Number:**	GS7128: MP3	
Methodology:	TPDDTEC version 1	Sectoral Scope/Technical Area:	01, 03, 13	
Publication of MR:	Initial version: Version 1, dated 23/11/2022			
Final Monitoring Report:	Monitoring report (version 7, 23/11/2023)			
Average emission reductions:	Estimated:	15,777 tCO2e/year	Verified:	16,757 tCO_2e
GHG reducing measure/technology:	GHG reduction due to provision of safe water using rehabilitation of non-functioning boreholes to provide households with a source of safe water. The project activity is located in the Kilifi County, Kenya. By provision of safe water, the project will ensure that households consume less firewood during the process of water purification and as a result there shall be a reduction of carbon dioxide emissions from the combustion process.			

Party	Project participants	Party considered a project participant	Contract party
Kenya (Host)	CO2balance UK Ltd (private entity)	No	☒

II. VERIFICATION TEAM

Verification Team				Role									
Full name	Affiliation	Appointed for Sectoral Scopes (Technical Areas)	Team leader	Acting/trainee Team Leader	Local Expert	Team Member (Auditor)	Technical Expert	Acting/Trainee Tech. Expert	Trainee Auditor	Technical Reviewer	Expert to TR	Trainee TR	Trainee Assessor
Anubhav Dimri	Carbon Check	1.1, 1.2, 3.1, 8.1, 13.1	X				X						
R Saranya[1]	Carbon Check	--							X				
Willis Okumu	Carbon Check	--			X								
Indumathi C	Carbon Check	1.1, 1.2,3.1, 13.1, 13.2								X			

III. VERIFICATION REPORT
Verification Phases and Status:

[1] Till 24/02/2023 only

☒ Desk Review ☒ Follow up interviews, Onsite Assessment

☒ Resolution of outstanding issues ☒ Corrective Actions / Clarifications Requested

☒ Full Approval and Submission for Issuance ☐ Rejected.

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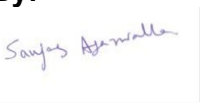
☒	**By:** 	☒ No distribution without permission from the Client or responsible organizational unit
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Abbreviations

BAU	Business As Usual
CA	Corrective Action / Clarification Action
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CAR	Corrective Action Request
CCIPL	Carbon Check (India) Private Ltd.
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CO_2	Carbon Dioxide
CO_{2e}	Carbon Dioxide Equivalent
DVR	Draft Validation Report
EB	CDM Executive Board
EF	Emission Factor
FA	Final Approval
FAR	Forward Action Request
FVR	Final validation Report
GS	Gold Standard
GHG	Greenhouse gas(es)
GWh	Giga Watt Hour
IPCC	Intergovernmental Panel on Climate Change
KIMAWASCO	Kilifi Mariakani Water and Sewerage Company Limited
MP	Monitoring Plan
MWh	Mega Watt Hour
MRR	Monthly Reading Records
OSV	On Site Visit
QC/QA	Quality control/Quality assurance
RMP	Revised Monitoring Plan
SDG	Sustainable Development Goals
TA	Technical Area
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VVB	Gold Standard Validation and Verification Body
VVS	Validation and Verification Standard
WASH	Water, Sanitation and Hygiene

Verification Opinion — summary

Carbon Check (India) Private Ltd. has performed the 3rd periodic verification of the GS-Project Activity "VPA 6 Kilifi Borehole Rehabilitation Project (GS7128)", GS reference number GS7128, date of design certification 03/10/2019.

The monitoring period under assessment is from 01/07/2021 to 30/06/2022 (inclusive of both days) for GS7128. The verification team assigned by the VVB concludes that the GS project activity as described in the revised approved GS4GG PDD (version 12, dated 03/10/2023) /B04/, and monitoring report (version 7, 23/11/2023) /01/, meets all the relevant requirements of the Gold Standard for Global Goals. The verification has been conducted in-line with the requirements of CDM VVS for Project Activities (version 03.0) /B01/ and GS4GG principles & requirements version 1.2, GS4GG safeguarding principles & requirements version 1.2, GS4GG programme of activity requirements version 1.2, GS4GG community services activity requirements version 1.2 and GS Validation and Verification Standard, version 1.0 /B03/ and other relevant requirements as applicable.

Verification methodology and process

The Verification team confirms the contractual relationship signed on 09/11/2022 between the VVB, Carbon Check (India) Private Ltd. and the CME, CO2balance UK Ltd /11/. The team assigned to the verification meets the Carbon Check (India) Private Ltd. internal procedures including the UNFCCC and GS4GG requirements /B03/ for the team composition and competence. CCIPL has conducted a thorough contract review as per UNFCCC, GS4GG and Carbon Check procedures and requirements.

The verification has been performed as per the requirements described in the Gold Standard for the Global Goals Principles & Requirements (version 1.2) and CDM VVS for Project Activities (version 03.0) /B01/ and constitutes the review and completion of the following steps:

- Reviewing the registered/ revised approved PDD /B04/ (version 12, dated 03/10/2023), including the monitoring plan and the corresponding validation report, including the SDG parameters;
- Desk review of the MR /01/, previous verification reports (if any), deviation request and requests for the revision of monitoring plan (if any) and other relevant documents including documents related to the project activities in emission reductions.
- Review of the applied monitoring methodology TPDDTEC version 1/B02/
- Review of any CMP and EB decisions, clarifications and guidance from the Gold Standard for Global Goals;
- Onsite visit (02/02/2023 to 05/02/2023);
- Issuance of Draft Verification Report (28/02/2023);
- Resolution of CARs and CLs raised during verification.
- Confirmation that any FARs raised during validation or previous verification have been addressed by the Project Participant.
- Issuance of Final Verification Report.

In Carbon Check's opinion the project activities have been implemented in accordance with the monitoring methodology /B02/, monitoring plan /B04/ as contained in the registered/ revised approved PDD/B04/. Based on the document review and the onsite visit interviews, the verification team confirms that the project activity has resulted in 16,757 tCO_2e of net emission reductions during the reported monitoring period. The GHG parameters and non-GHG parameters were correctly calculated/monitored on the basis of the applied approved monitoring methodology /B02/ and as per the registered/ revised approved PDD/B04/.

Carbon Check as the VVB is therefore pleased to issue a positive verification opinion expressed in the attached Certification statement and certify the net emission reductions-of 16,757 tonnes of CO_2e equivalent from the Project Activitiy "VPA 6 Kilifi Borehole Rehabilitation Project (GS7128)" during the above stated monitoring period.

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1. INTRODUCTION

CO2balance UK Ltd has appointed Carbon Check (India) Private Ltd. to perform an independent verification of the GS Project Activity "VPA 6 Kilifi Borehole Rehabilitation Project (GS7128)" in Kenya (hereafter referred to as "project activity"). This report summarises the findings of the verification of the project, performed on the basis of GS4GG principles & requirements version 1.2, GS4GG safeguarding principles & requirements version 1.2, GS4GG programme of activity requirements version 1.2, GS4GG community services activity requirements version 1.2, GS Validation and Verification Standard, version 1.0 /B03/ and paragraph 62 of the CDM M & P, as well as criteria given to provide for consistent project operations, monitoring and reporting and the subsequent decisions by the CDM Executive Board and Gold Standard Secretariat. Verification is required for all the registered GS Project Activities/B04/ intending to confirm their achieved emission reductions and proceed with request for issuance of GS-VERs. This report contains the findings and resolutions from the verification and a certification statement for the verified emission reductions.

1.1 Objective

Verification is the periodic independent review and *ex post* determination of both quantitative and qualitative information by a Validation and Verification Body (VVB) of the monitored reductions in GHG emissions that have occurred as a result of the registered GS Project Activity /B04/ during a defined monitoring period.

Certification is the written assurance by a VVB that, during a specific period in time, a project activity achieved the emission reductions as verified. Hence, this will be issued only after the successful closure of CARs and CLs.

The objective of this verification was to verify and certify emission reductions reported for the GS-Project Activity "VPA 6 Kilifi Borehole Rehabilitation Project (GS7128)" in country "Kenya" for the monitoring period GS7128 (MP3): 01/07/2021 to 30/06/2022 (both days inclusive).

The purpose of the 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. Other non-GHG parameters shall also be assessed as per the requirement of GS. Verification of emission reductions for Gold Standard crediting is only for eligible gases.

In particular, the monitoring plan, monitoring report and the project's compliance with the relevant GS4GG/UNFCCC and host Party criteria are verified in order to confirm that the project has been implemented in accordance with the previously registered project design and conservative assumptions, as documented. And also, to confirm that monitoring plan is in compliance with the registered/ revised approved PDD/B04/ and the approved monitoring methodology.

1.2 Scope

The scope of the verification is:

- To verify the project implementation and operation with respect to the registered/ revised approved PDD/B04/
- To verify the implemented monitoring plan with the registered/ revised approved PDD and applied baseline and monitoring methodology/B02/.
- 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/02/ and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.

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- To verify that reported GHG emission data and other non-GHG parameters as per the requirement of GS is sufficiently supported by evidence.

Carbon Check scope of verification as a third-party verifier is to verify project emission reductions and sustainable development impacts against the requirements set out by the Gold Standard. The verification shall ensure that the reported emission reductions are complete and accurate in order to be certified.

The verification comprises a review of the Monitoring report over the monitoring period (GS7128 (MP3): 01/07/2021 to 30/06/2022 (both days inclusive) and based on the registered/ revised approved PDD/B04/ in part of the monitoring parameters and monitoring plan, emission reduction calculation spread sheet, monitoring methodology and all related evidence provided by project participant.

Onsite visit and stakeholders' interviews are also performed as part of the verification process.

1.3 Project Activity Description

Review of the monitoring report /01/ reveals that the objective of the Project Activity is to support the provision of safe water using borehole technology to hundreds of households within the Kilifi County, Kenya. The project activity is located in Kilifi County, Kenya. By providing safe water, the project will ensure that households consume less firewood during the process of water purification and as a result there shall be a reduction of carbon dioxide emissions from the combustion process.

The project activity involves rehabilitation of non-functioning boreholes to provide households with a source of safe water. In this project, CO2balance UK Ltd., works with Griot Consulting (project implementation partner) in Kilifi County, Kenya, to identify broken down boreholes and renovate them so that they deliver clean, safe water and breakdowns are fixed rapidly. The project was a VPA of the GS 1366 Micro Energy PoA Program. However, it has been changed to a standalone project activity.

The boreholes included under the project are entirely human operated and fitted with handpump models Afridev, U3 Modified and India Mark II models. Only Afridev model has been distributed and installed in the project activity under verification. CO2balance and Griot Consulting have rehabilitated 61 boreholes under the project activity.

The technical specifications of the boreholes included in the project activity are provided below:

Model	Afridev
Cylinder diameter (mm):	50
Maximum Stroke (mm):	225
Approx. discharge at about 75 watt input m^3/h:	at 10 m head 1.4
	at 15 m head 1.1
	at 20 m head 0.9
	at 30 m head 0.7
Pumping lift (m):	10-45
Water consumption (lpcd):	15-20

The details of boreholes in the project activity are provided in the section B.1 of the MR/01/ and have also been cross-checked with the database of the borehole and the households/17/.

The specification of the boreholes provided in the MR/01/ were cross-checked with the references provided in the MR/01/.

CO2balance UK Ltd is the Project Developer for the project activity. The boreholes that were rehabilitated are Afridev, U3 Modified and India Mark II type (only Afridev implemented in the applicable project activity). A total of 61 boreholes have been rehabilitated in the project activity/05/.

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The project activity aims to support sustainable development in the host country, Kenya. The project aims to impact upon sustainable development within the communities it touches, including contributing to the sustainable development goals.

The verification team confirm that the project is in line with the plans contained in the registered/ revised approved GS PDD/B04/.

2. METHODOLOGY

The verification consists of the following four phases:

1. Completeness check of the Emission Reductions/02/, GS4GG Monitoring report/01/, and Project Administration System;
2. Review of project documentation (monitoring plan, monitoring report, monitoring methodology, project design document, applicable tools in particular attention to the frequency of measurements, QA/QC procedures and other relevant documents and regulations);
3. Onsite visit interview (including follow-up interviews with project stakeholders, when deemed necessary) includes the following:
   - An assessment of implementation and operation of project activity with respect to registered PDD/B04/ or approved revised PDD/B04/;
   - Review of information flows for generating, aggregating and reporting the monitoring parameters;
   - Interview with relevant personnel to determine whether the operations and data collection procedures are implemented and in accordance with monitoring plan of the Project Activity/B04/;
   - Cross check of information and data provided in the monitoring report with original monitoring survey questionnaires and WBT test observation record sheets. Also, checking the consistency of the information reported as per the survey forms with actual physical conditions in sampled households;
   - Check of monitoring equipment, calibration frequency and monitoring practice in-line with methodology and PDD/B04/;
   - Review of assumptions made in calculating the emission reductions;
   - Implementation of QA/QC procedure in-line with the PDD/B04/ and methodology requirement/B02/.
4. Resolution of outstanding issues and the issuance of the final Verification report and Certification statement.

The following sections outline each step in more detail.

Duration of Verification:

- Signing of Letter of Engagement: 09/11/2022
- Onsite visit interview: 02/02/2023 to 05/02/2023
- Reporting/Calculations/Quality and Control checks: 04/12/2023 to DD/MM/YYYY

2.1 Desk review

The following table outlines the documentation reviewed during the verification:

No.	Title
/01/	1. Monitoring Report, version 1, dated 30/03/2022 2. Monitoring Report, version 7, dated 23/11/2023
/02/	1. Emission Reduction spreadsheet corresponding to /01-1/ 2. Emission Reduction spreadsheet corresponding to /01-2/
/03/	Borehole Project Survey records
/04/	Borehole Usage Survey records
/05/	Borehole WCFT Survey records

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/06/	Borehole Maintenance Records for the monitoring period
/07/	Carbon Waiver Forms from the household for each borehole
/08/	Baseline Survey records from 2022
/09/	Borehole WCFT scanned copies
/10/	1. Randomly selected Households for the surveys during the monitoring period 2. Sample size calculator
/11/	Water Quality Test Reports – 15/02/2021 to 12/03/2021 (Bacterial and Chemical), 16/11/2021 to 22/11/2021 (Bacterial and Chemical), 11/10/2021 to 26/10/2021 (Bacterial and Chemical), 14/02/2022 to 01/03/2022 (Bacterial and Chemical) – All Tests conducted by KIMAWASCO
/12/	Training Records dated 04/04/2022
/13/	WASH Training Report dated 18/01/2022 – 20/01/2022 and 30/03/2022 to 31/03/2022
/14/	Copies of Grievance Books
/15/	f_{NRB} Report prepared based on Tool30 by C4 EcoSolutions (Pty) Ltd dated July 2021
/16/	Technical Training for the project activity minutes
/17/	Borehole household list database
/18/	Weighing scales used for WCFT: 1. Purchase receipt dated 02/04/2022 2. Technical specifications of the weighing scales
/19/	Deviation request approved by GS to use cross-sampling of the 3 project activities and use a common result dated 14/06/2023
/20/	Deviation request approved by GS for delay in annual monitoring for GS7513 dated 19/05/2023

During the desk review, Carbon Check applied the standard auditing techniques to assess the quality of information provided.

2.2 Background documents:

Ref no.	*Reference Document*
/B01/	1. CDM VVS for Project Activities (version 03.0) 2. CDM PS for Project Activities (version 03.0) 3. CDM PCP for Project Activities (version 03.0)
/B02/	GS Methodology Technologies and Practices to Displace Decentralized Thermal Energy Consumption (TPDDTEC), version 1
/B03/	1. GS4GG Principles & Requirements (version 1.2) 2. GS4GG Safeguarding principles & requirements, version 1.2 3. GS4GG Programme of activity requirements, version 1.2 4. GS4GG Community services activity requirements, version 1.2
/B04/	1. Registered/ Revised approved PDD and corresponding validation report GS7128: dated 03/10/2023, version 12) 2. Monitoring Report for MP2 dated 07/11/2022, version 9 and corresponding verification report
/B05/	Template Guide for filling out the Gold standard for the global goals - Monitoring report (version 1.1)
/B06/	1. Standard for sampling and surveys for CDM PAs and PoAs, version 09 2. Guidelines for sampling and surveys for CDM project activities and programme of activities (version 04.0)" 3. Cookstoves Usage Rate Guidelines, version 2.0 4. Rule Update: Applicability of Minimum Site Visit Requirements by VVB dated 16/08/2021
/B07/	Site Visit and Remote Audit Requirements and Procedures, version 2.0, dated 30/05/2023
/B08/	Weblinks: 1. http://cdm.unfccc.int/ 2. https://www.goldstandard.org
/B09/	TOOL 30: Calculation of the fraction of non-renewable biomass, version 4.0

2.3 Onsite Visit and follow-up interviews with project stakeholders

A.1. On-site inspection

A physical on-site inspection has been conducted for the verification of the project activity.

Onsite visit was performed by the verification team of Carbon Check from (02/02/2023 to 05/02/2023) and the following activities were performed:

i. An assessment of the implementation and operation of the registered GS project activity as per the registered/ revised approved PDD /B04/;
ii. A review of information flows for generating, aggregating and reporting the monitoring parameters;
iii. Interviews with relevant personnel to determine whether the operational and data collection procedures are implemented in accordance with the monitoring plan in the PDD/B04/;
iv. A cross check between information provided in the monitoring report /01/ and data from other sources such as borehole maintenance and repair records /06/, water quality records /11/ or similar data sources;
v. A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD /B04/ and the selected methodology /B02/ and corresponding tool(s), where applicable;
vi. A review of calculations and assumptions made in determining the GHG data and emission reductions/02/

vii. An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters. Verification of the monitoring of sustainable development indicators

The project representatives and stakeholders interviewed: 02/02/2023 to 05/02/2023.

Sl. No.	Name	Organization	Topic	Means of Interview
1.	Stephen Morris	CO2balance UK Ltd	Project implementation, Monitoring Report, discussed contents of the MR, GHG and non-GHG parameters, topics like project implementation /operation, compliance of monitoring plan with monitoring methodology, registered PDD, ER calculation, QA/QC of monitoring data, internal audit of monitoring data etc.	Onsite Face to Face
2.	Susan Onyango	Griot	Project implementation, Monitoring Report, discussed contents of the MR, GHG and non-GHG parameters, Ex-ante parameters, Methodology	Onsite Face to Face
3.	Eddieson Kombo	Griot	Project implementation, Discussion on water purification solutions, Basic information on end users for boreholes, Input source of water for the boreholes, Personnel (maintenance/ repair and monitoring) at the boreholes (including roles and responsibilities), Water quality testing systems, Training process, Operations and Maintenance, Seasonal/ Weekly variation in the daily water demand, End User record keeping procedure, Maintenance Records, QA/QC of monitoring data, internal audit of monitoring data.	Onsite Face to Face
4.	Baraka Swalleh	Griot	Project implementation, Discussion on water purification solutions, Basic information on end users for boreholes, Personnel (maintenance/ repair and monitoring) at the boreholes (including roles and responsibilities),	Onsite Face to Face
5.	Alice Dzombo	KIMAWASCO	Water Quality tests, Testing Procedure, Lab Accreditation	Onsite Face to Face

6.	Nzai K Kombe	Interior Ministry	Local Stakeholder comments, Impact of project on the community	Onsite Face to Face
7.	Rodgers K Kombe	Borehole Manager	Local Stakeholder comments, Impact of project on the community	Onsite Face to Face
8.	Mwaswere Juma	Pwani University	Local Stakeholder comments, Impact of project on the community, Research on the water table and different sources of water in the project location, WASH schemes	Onsite Face to Face
9.	Tunje Pole	Pwani University	Local Stakeholder comments, Impact of project on the community, Research on the water table and different sources of water in the project location, WASH schemes	Onsite Face to Face
10.	Janet Kapombe	Borehole Manager/ Village Elder	Borehole maintenance program	Onsite Face to Face
11.	Julius Sonje	Local Stakeholder	Local Stakeholder comments, Borehole maintenance program	Onsite Face to Face
12.	Mariam Ali	Borehole Water User	Usage Surveys	Onsite Face to Face
13.	Tanda Tsui	Borehole Water User	Project Survey, Usage Survey, WCFTs	Onsite Face to Face
14.	Getrude Mzungu	Borehole Water User	Usage Survey	Onsite Face to Face
15.	Genge Kalume	Borehole Water User	Project Survey	Onsite Face to Face
16.	Juma Katana	Borehole Water User	Project Survey	Onsite Face to Face
17.	Ngumbao Luwali	Borehole Water User	Usage Survey	Onsite Face to Face
18.	Samuel Karisa	Borehole Water User/ Borehole Manager	Project Survey, WCFTs, Borehole maintenance program	Onsite Face to Face
19.	Kabibi Mumba	Borehole Water User	WCFTs	Onsite Face to Face
20.	Zawadi Chiro	Borehole Water User	WCFT participant	Onsite Face to Face
21.	Mackmillan Jilani	Borehole Water User	Project Survey, WCFT participant	Onsite Face to Face

22.	Mbarak Sammy	Borehole Water User	Project Survey, Usage Survey, WCFTs	Onsite Face to Face
23.	Amina Safaru	Borehole Water User	WCFT participant	Onsite Face to Face
24.	Neema Yusuf	Borehole Water User	Project Survey, Usage Survey, WCFTs	Onsite Face to Face
25.	Mama Katana	Borehole Water User	WCFT participant	Onsite Face to Face
26.	Elizabeth Jumwa	Borehole Water User	Project Survey, Usage Survey	Onsite Face to Face
27.	Denis Mwango	Borehole Water User	Usage Survey	Onsite Face to Face

Through the above-mentioned activities, the verification team confirmed the following Gold Standard project aspects in relation to the project activity:

- The implementation and operation of the project activity is as described in the monitoring plan in the registered PDD /B04/.
- The operational and data collection procedures are implemented as per the monitoring plan in the PDD/B04/.
- The information flow for generating, grouping and reporting of the monitored parameters.
- Procedures to avoid double counting are in place.

A.2. Sampling approach

The total population of users for each project activity during the reported monitoring period is provided below:

Project ID	Number of boreholes	Number of households	Number of total Users	Number of capped users[2]
GS7128	61	5,071	37,942	18,193

The project proponent has carried out common sampling across homogenous project activities (GS7128, GS7513, GS7629) located within Kilifi County, Kenya. A deviation request has been approved by the GS dated 14/06/2023 to allow use of cross-sampling of the 3 project activities and use a common result. The samples were drawn randomly from borehole information databases using the random sampling procedure. The sampling for each age group has been done separately. A total of 135 users with the three age groups (45 each) of boreholes has been applied by the project proponent for usage surveys and project surveys. The sample size calculation and randomizer used for selection of samples has been provided to the verification team/10/. The usage surveys and project surveys were carried out by the PP from 05/04/2022 to 13/04/2022 and 04/04/2022 to 13/04/2022 respectively. The households have been selected using the random number generator. The WCFTs/05/ conducted on 42 households, with one outliers identified, leaving 41 samples. WCFTs/05/ were conducted by the PP from 05/04/2022 to 11/04/2022. The relative precision achieved for the usage surveys determined through the samples is 6.0%. The relative precision achieved for the WCFTs determined through the samples is 9.3%.

The monitoring parameters to be monitored through the sampling plan as per PDD/B04/ are:

[2] Each borehole is capped to 300 end users only.

1. Parameter $U_{p,y}$
Usage rate in project scenario p through year y
The parameter is measured through annual usage surveys. The usage survey has been carried out by staff trained/12/ by CO2balance to meet the specific requirements of the methodology/B02/. The relative precision achieved for the parameter determined through the samples is 6.0%.

2. Parameter $Q_{p,y}$
Quantity of safe water supplied in the project scenario p during the year y using the zero or low emissions clean water supply technology. The parameter is monitored through WCFTs carried out at biennial frequency. The parameter value is capped at 7.5 litres per person per day. The relative precision achieved for the parameter determined through the samples is 9.3%.

3. Parameter $Q_{p,cleanboil,y}$
Quantity of safe water boiled in the project scenario p during the year y using the zero or low emissions clean water supply technology. The parameter is monitored through WCFTs carried out at biennial frequency. The relative precision achieved for the parameter determined through the samples is 9.3%.

4. Parameter $Q_{p,rawboil,y}$
The raw of unsafe water that is still boiled after installation of the water treatment technology. The parameter is monitored through WCFTs carried out at biennial frequency. The relative precision achieved for the parameter determined through the samples is 9.3%.

5. Parameter $LE_{p,y}$
Leakage in project scenario p during year y. The parameter is monitored through monitoring surveys carried out at annual frequency.

6. Parameter $P_{p,y}$
Quantity of fuel that is consumed in the project scenario p during year y (kg/household-day)
The parameter is calculated using the Baseline and project surveys and the parameter quantifies the amount of that is consumed in the project scenario. The parameter is monitored at annual frequency.

7. Parameter $T_{p,y}$
Project time spent collecting firewood per household per day (hours)
The parameter is calculated using the project surveys and the parameter quantifies the amount of time spent collecting water compared to the pre-project scenario. The parameter is monitored at annual frequency.

8. Parameter Usage of time saved on firewood collection
Uses of time saved which was previously spent on firewood collection
The parameter is calculated using the project surveys and the parameter quantifies the amount of time saved on firewood collection. The parameter is monitored at annual frequency.

9. Parameter $P_{,y}$
Number of persons having access to safe water in the project activity
The parameter is calculated using the Project Survey and Usage surveys and the parameter quantifies the number of persons having access to safe water compared to baseline scenario. The parameter is monitored at annual frequency.

Sustainability Monitoring Plan (links the parameter already monitored to the closest, most relevant SDG Target as per GS4GG requirements)
Verification team has cross checked the record keeping procedure, sales records, production records, water quality records during onsite visit interviews with the PP. Based on the records and information collected on each parameter by the VVB during the onsite visit interviews, it is concluded whether the values determined and stated in the monitoring report for following parameters are appropriate and correct.

1. SDG 3- Good Health and Well-being

SDG Impact: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.
The relevant parameter for the SDG is $P_{p,y}$ (Quantity of fuel that is consumed in the project scenario p during year y (kg/household-day)). The parameter is calculated based on the Baseline Surveys and Usage Surveys. The parameter was verified by the survey records provided and cross-checking the responses with the households. This is acceptable to the verification team and is a valid means of cross-checking the values.

2. SDG 5 - Gender Equality
SDG Impact: Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate.
The relevant parameter is $T_{p,y}$ (Project time spent collecting firewood per household per day (hours)) and Usage of time saved on firewood collection (Uses of time saved which was previously spent on firewood collection). The value is monitored through the Project Survey. The parameter was verified by the review of the survey records of the households and the responses are cross-checked with the households. This is acceptable to the verification team and is a valid means of cross-checking the values.

3. SDG 6: Clean Water and Sanitation
SDG Impact: By 2030, achieve universal and equitable access to safe and affordable drinking water for all.
The relevant parameter is $P_{,y}$ (Number of persons having access to safe water in the project activity) and Quality of Treated Water (Performance of the treatment technology). The value is monitored through the Project Survey, Usage Survey and Household List. The parameter was verified by the review of the survey records of the households and the responses are cross-checked with the households. This is acceptable to the verification team and is a valid means of cross-checking the values.

The parameter quality of treated water was checked based on the laboratory tests/11/. The parameter is tested annually/02/.

Standard auditing techniques were applied by CCIPL to assess and verify the quality of information provided during the course of verification. A single sampling and monitoring was undertaken by the Project Proponent for the Project Activities (GS7128, GS7513, GS7629) in Kilifi County, Kenya. This approach has been accepted based on the deviation approved by the GS/19/ dated 14/06/2023.

The verification team applied a sampling approach for onsite visit interview as part of verification in accordance with the paragraph 26 of the Standard: Sampling and surveys for CDM project activities and programmes of activities, Version 09.0. In accordance with the paragraph 28 of the sampling standard, acceptance sampling has been chosen by the verification team and accordingly steps listed in paragraph 29 of the sampling standard was followed. So, in accordance with paragraph 39 (a) of sampling standard the Verification team opted for AQL of 0.5% and UQL of 20%; producer risk of 5 % and consumer risk of 20 % in determining the VVB's sample size for which the sample size is 8 with acceptance number 0. The verification team decided to conduct the onsite visit for 8 households for Project Survey and Usage Survey. Onsite visit was also conducted for 8 households of WCFT sample from the Project Proponent's sample size for the cross-sample of three project activities for the monitoring period with acceptance number (c) as 0.

Based on the review of the monitoring report and onsite visit interviews, verification team confirms that the survey results were consistent with the results reported for the households. The information on the household size at the time of the monitoring survey was found correct and consistent with the survey conducted by the VVB as part of the onsite visit.

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2.4 Resolution of outstanding issues

The objective of this phase of the verification is to resolve any outstanding issues (issues that require further elaboration, research or expansion) which have to be clarified/corrective action done prior to final GS VVB's conclusions on the project implementation, monitoring practices and achieved emission reductions. In order to ensure transparency a verification protocol is completed for the project activity. The protocol shows in transparent manner criteria (requirements), means of verification and resulting statements on verification actual project activity against identified criteria.

The verification protocol serves the following purposes:

- It organises in a table form, details and clarifies the requirements, a GS project is expected to meet GS4GG requirements;
- It ensures a transparent verification process where the GS VVB will document how a particular requirement has been verified and the result of the verification.
- It ensures that the issues are accurately identified, formulated, discussed and concluded in the validation report.
- It ensures the determination of achieving credible emission reductions from the project activity.

The verification protocol consists of two tables. Table 1 reflects the verification requirements and reference to the materials used to verify the project activity against those requirements, as well as means of verification, reference to Table 2 (i.e. tables of findings) and preliminary and final opinion of the GS VVB on every particular requirement listed in table 1.

Verification Protocol Table 1: Requirement checklist				
Checklist question	***Verification Team Comment/MoV***	***Reference***	***Findings comments references, data source / Draft Conclusion***	***Final Conclusion***
The checklist items in Table 1 are linked to the various requirements the project should meet. The checklist is organised in various sections. Each section is then further sub-divided as per the requirements of the topic and the individual project activity.	*The section is used to elaborate and discuss the checklist item in detail. It includes the assessment of the Verification team and how the assessment was carried out. The reporting requirements of the VVS and Project Standard shall be covered in this section.*	*Gives reference to the information source on which the assessment is based on*	*Assessment based on evidence provided if the criterion is fulfilled (OK), or a CAR, CL or FAR is raised (see below). The assessment refers to the draft verification stage.*	*In case a corrective action or a clarification request the final assessment at the final verification stage is given.*

The findings of verification process are summarized in the tables below.

CAR/ CL/ FAR ID	xx	**Section no.**		**Date:** DD/MM/YYYY
Description of CAR/ CL/ FAR				
CME response				**Date:** DD/MM/YYYY
Documentation provided by the Project Proponent				

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GS VVB assessment	Date: DD/MM/YYYY

Corrective action requests (CARs) are raised, in case:

(a) Non-conformities with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
(b) Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
(c) Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
(d) Issues identified in a FAR during validation/previous verification(s) that are not been resolved by the project participant(s) to be verified during current verification.

Requests for clarification (CLs) are raised if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

A forward action request (FAR) is raised during verification to highlight issues related to project implementation/monitoring that require review during the subsequent verification of the project activity. FARs shall not relate to the CDM requirements for issuance.

2.5 Internal quality control

The final verification report has passed a technical review before being submitted to the project participant(s) and GS4GG Certification Team / Board. The technical review was performed by a technical reviewer qualified in accordance with CCIPL's qualification scheme for GS4GG validation and verification.

2.6 Verification Team

Carbon Check has appointed a competent team as per the Accreditation Standard and Carbon Check internal procedures, the team is outlined below:

Verification Team		Type of Involvement							
Full name	**Appointed for Sectoral Scopes (Technical Areas)**	Supervising the work	Desk review	Onsite Visit Interview	Report and protocol Writing	Technical Expert Input	Reporting Support	Technical Reviewer	Trainee Assessor
Anubhav Dimri	1.1, 1.2, 3.1, 8.1, 13.1	X	X	X	X	X	X		
R Saranya[3]	-			X					
Willis Okumu	-			X					
Indumathi C	1.1, 1.2,3.1, 13.1, 13.2							X	

Anubhav Dimri: is an appointed Team Leader. He holds a Post Graduate Diploma in Industrial Safety and Environmental Management. He is a trained GHG Lead Auditor. He is participated and passed 5 days ISO 50001 Lead Auditor (UNIDO sponsored) training course. He has experience in the field of Carbon Offsets both in the regulatory and voluntary front, including project validation. He has participated in GS, VCS and CDM validations and validations. He has been involved in verification/validation of GS projects with reference numbers: GS 411, GS

[3] Till 24/02/2023 only

916, GS 1231, GS 1029, GS 1030, GS 1031, GS 1385, GS 2094, GS 1162, GS 1352, GS 1353, GS 2437, GS 2718, GS 2722. He has also been involved in more than 100 CDM projects/programme of activities submitted to UNFCCC for Request for Registration/Inclusion/Request for Issuance. He has also worked on a number of VCS projects. He has also attended several Gold Standard VVB webinar trainings and GS4GG trainings. He has also undergone training for ISO 9001, GHG verifier training, and technical area 1.2 training. He is qualified as technical expert for TA 1.1, 1.2, 3.1, 8.1 and 13.1 under CDM SS/TA categorization.

Indumathi. C: Qualified lead assessor and internal technical reviewer for offset projects validations and verifications under CDM, VCS and Gold Standard (GS) and actively been involved in the validation and verification or internal technical review of more than 300 GHG offset projects. She is qualified as technical expert for TA 1.2, 3.1,4.1,13.1 and 13.2 under CDM SS categorisation. She has undergone extensive training in the validation and verification of carbon offset projects including the accreditation requirements for the VVBs. She has more than 14 years of work experience in climate change mitigation, renewable energy, energy efficiency and energy access. She has worked with various Designated Operational Entities like TUV NORD, TUV Rheinland and 4KES for GHG emission reduction projects under different carbon crediting mechanisms. Moreover, she was involved in implementation of UNDP energy programs at Ministry of New and Renewable Energy (MNRE) and has also gained experience in energy trade by working with British High Commission. She is a certified GHG Auditor and Energy Manager (Bureau of Energy Efficiency, Government of India). She holds a Bachelor of Technology degree in Energy and Environmental Engineering & Post Graduate Diploma in Business Administration. She has been involved in number of GS validation and verification projects (as internal technical reviewer).

She has also attended Several Gold Standard DOE webinar trainings including training on GS4GG.

R Saranya: was a Trainee Assessor at Carbon Check (India) Private Limited till 24/02/2023.

Willis Okumu: is a local expert for Kenya and speaks the local languages of KiSwahili as well as English.

3. VERIFICATION FINDINGS

The findings of the verification are described in the following sections. The verification criteria (requirements), the means of verification and the results of verification are documented in detail below.

3.1 Project implementation

The Project Actrivity “VPA 6 Kilifi Borehole Rehabilitation Project (GS7128)” with GS reference number GS7128 is registered with GS4GG as a standalone project activity. It was included under the PoA “GS 1366 Micro Energy PoA” GS reference number GS1366 prior to transition from a VPA to a standalone project activity.

Project Participants:	CO2balance UK Ltd
Title of Project Activity:	VPA 6 Kilifi Borehole Rehabilitation Project (GS7128)
GS registration No:	GS7128
Applied Baseline and monitoring methodology:	TPDDTEC, version 1 /B02/
Project Scale:	Small scale
Location of the project activity:	Kenya
Project crediting period:	GS7128: 11/12/2018 – 10/12/2023

Reported monitoring Period verified in this verification:	GS7128 (MP3): 01/07/2021 to 30/06/2022 Both days inclusive

As part of the onsite visit interviews, the verification team was able to confirm that the project implementation is in accordance with the project description contained in the registered PDD/B04/.

Project physical features (technology, project equipment, monitoring and metering equipment)	Review of monitoring report reveals that the objective of the project activity is rehabilitation of non-functioning boreholes to provide villages with a source of safe water in Kilifi county in Kenya. This displaces the baseline method of water treatment, which involves boiling water using solid fuel. The project activity removes the need of households to rely on firewood to boil water and therefore reduces CO2 emissions. The boreholes included under the project are entirely human operated and fitted with hand pump model Afridev model.	
Any Design Change been sought and approved by GS4GG for the project?	☒ Yes ☐ No	Design change has been approved for the PDD version 12, dated 03/10/2023.

Project activity is implemented in line with the registered GS PDD/B04/. Verification team reviewed the ER spread sheet /02/ and found that a total 37,947 end users (capped at 18,193) have been provided access to safe water from the project activity. A total of 61 boreholes were rehabilitated in the Project Activity.

Under the concerned project activity, the boreholes have been rehabilitated in the Kilifi County, Kenya.

During the onsite visit, verification team checked the design and technology of the boreholes, which are in line with the description provided in the registered PDD /B04/ and technical specifications provided by the Project Representative in the MR/01/. There were no changes observed from the registered monitoring plan of the registered PDD/B04/. Monitoring procedure of GHG data is found sufficient and in accordance with the procedures stipulated under the registered monitoring plan.

The project activity was implemented and refurbishment of boreholes done as described in the registered PDD/B04/.

On the basis of the onsite visit and the reviewed project documentation along with documentary evidences, it can be confirmed that the project implementation is in accordance with registered PDD/B04/. The project has been implemented and operated as described in the registered PDD/B04/. The GHG related parameters and sustainable development indicators are also monitored as per the registered PDD/B04/.

Verification team has also assessed the monitoring and impact on the sustainable development indicators by the project implementation and found them to be appropriate as per the approved PDD /B04/.

Carbon Check's verification team considers the project description of the project contained in the registered PDD/B04/ to be complete and accurate. The PDD /B04/ comply with the relevant methodology /B02/, tools, forms and guidance at the time of submission for registration.

3.2 The actual operation of the Gold Standard programme of activity

The starting date of the Project Actvity is provided below:
GS7128: 10/12/2018

The crediting period for the project activity is provided above. The total number of boreholes rehabilitated during the reported monitoring period has been verified from the monitoring report. Operation of the community based safe water solutions was confirmed during the onsite visit by the verification team as follows via verifying:

- Actual implementation of the boreholes
- Interviews with the PP representatives (including monitoring and maintenance/ repair team from Griot)
- Household record-keeping procedure

Carbon Check's verification team confirms that the project activity is implemented within the boundary of the project activity as described in the PDD /B04/ and the implementation and operation of the project activity has been conducted in accordance with the description contained in the registered PDD /B04/.

In summary, the operation of the project activity is in accordance with the registered PDD/B04/.

3.3 Compliance of the monitoring plan with the monitoring methodology including applicable tool(s)

The monitoring has been carried out in accordance with the monitoring plan contained in the registered PDD /B04/.

During the course of verification, all relevant monitoring parameters have been verified with regard to the appropriateness of the applied measurement method and applied QA/QC procedures. According to the methodology, For each project scenario, a monitoring survey and usage survey is conducted annually while a leakage assessment is conducted every two years to update monitoring parameters over time. A household and borehole database/17/ is thus maintained for the Project Activity.
During the course of verification, all relevant monitoring parameters have been verified with regard to the appropriateness of the applied measurement method and applied QA/QC procedures.

The verification team reviewed the monitoring plan in the PDD/B04/ and compared it against the requirements of the applied methodology /B02/ and confirms that appropriate provisions are included for the monitoring and reporting procedures, data management, and QA/QC procedures in line with the requirements of CDM VVS for the Project Actvities (version 03.0) /B01/ and GS4GG VVS and other GS4GG requirements /B03/.

The sampling plan implemented by the PP is in accordance with the applied approved monitoring methodology /B02/ and the registered PDD /B04/.

CCIPL confirms with a reasonable level of assurance that the claimed emission reductions are free from material errors, omissions or misstatements.

3.4 Monitored Parameters

EX-Post Parameters:

a. Parameter $N_{p,y}$

Number of persons consuming water supplied by project scenario p through year y
The parameter is measured through borehole project database/17/. The parameter is measured continuously as a product of Borehole users and Total crediting days. The reported value for the parameter is 9,726,636 (capped at 6,273,637). This is in accordance with the registered/ revised approved PDD/B04/.

b. Parameter $U_{p,y}$

Usage rate in project scenario p through year y
The parameter is measured through annual usage surveys/04/. The usage survey has been carried out by staff trained by trained local staff to meet the specific requirements of the methodology/12/. The reported value for the parameter is 85.19%. All data presented in excel is subject to checking and cross referencing of a sample of the raw data by CO2balance UK Ltd. This is in accordance with the registered/ revised approved PDD/B04/.

c. Parameter $Q_{p,y}$

Quantity of safe water supplied in the project scenario p during the year y using the zero or low emissions clean water supply technology.
The parameter is monitored through WCFTs carried out at biennial frequency. Method used similar to Kitchen Performance Test in which the volume of water consumed in each household is averaged over 3 days. Volume capped at 7.5 litres per person per day as per the methodology. The reported value for the parameter is 14.74 (capped at 7.5). The WCFT has been carried out by trained local staff to meet the specific requirements of the methodology. This is in accordance with the registered/ included PDD/B04/.

d. Parameter $Q_{p,cleanboil,y}$

Quantity of safe water boiled in the project scenario p during the year y using the zero or low emissions clean water supply technology. The reported value for the parameter is 0. The parameter is monitored through the Project Surveys. This is in accordance with the registered/ included PDD/B04/.

e. Parameter $Q_{p,rawboil,y}$

The raw of unsafe water that is still boiled after installation of the water treatment technology. The parameter is monitored through the Project Surveys. The reported value for the parameter is 0. This is in accordance with the registered/ included PDD/B04/.

f. Parameter $LE_{p,y}$

Leakage in project scenario p during year y.
The parameter is monitored through baseline and monitoring surveys carried out at biennial frequency. The reported value for the parameter is 0. This is in accordance with the registered/ revised approved PDD/B04/.

g. Parameter $f_{NRB,i,y}$

Non-renewability status of woody biomass fuel in scenario i during year y
The parameter is Fixed by baseline study for a given crediting period, updated if necessary/B04/. The reported value for the parameter is 0.93. The parameter was also checked during the first monitoring period of the project activity (GS7128)/15/. This is in accordance with the registered/ revised approved PDD/B04/.

h. Parameter $P_{p,y}$

Quantity of fuel that is consumed in the project scenario p during year y (kg/household-day)
The parameter is measured through Baseline and project surveys. The parameter is used to monitoring SDG3. The reported value for the parameter is 0. The parameter is calculated annually. This is in accordance with the registered/ revised approved PDD/B04/.

i. Parameter $T_{p,y}$

Project time spent collecting firewood per household per day (hours)

The parameter is monitored through project surveys carried out at annual frequency. This is in accordance with the registered/ revised approved PDD/B04/. The reported value for the parameter is 0.92.

j. Parameter Usage of time saved on firewood collection

Uses of time saved which was previously spent on firewood collection
The parameter is calculated using the project surveys and the parameter quantifies the amount of time saved on collecting firewood compared to the pre-project scenario/B04/. The parameter has been monitored on an annual frequency in accordance with the monitoring procedures. The parameter is calculated based on the Project Survey. This is in accordance with the registered/ revised approved PDD/B04/.

k. Parameter $P_{,y}$

Number of persons having access to safe water in the project activity
The parameter is measured through Project Database/Household List. The total number of households using each borehole. The number is capped at 300 users per borehole. The reported value for the parameter is 37,947 (capped at 18,193). The parameter is calculated annually. This is in accordance with the registered/ revised approved PDD/B04/.

l. Parameter Quality of Treated Water

Performance of the treatment technology
The water quality was tested in line with national standards in Kenya and WHO guidelines. The water samples were taken at source by the testing body/11/. The reported value for the parameter is 99.19% pass, 0.81% fail. Ms. Alice Dzombo from KIMAWASCO was interviewed by the verification team to confirm that WHO guidelines have been followed to test the Water Quality. KilifiMariakani Water and Sewerage Company (KIMAWASCO) is an entity of the County Government of Kilifi. The parameter is monitored on an annual frequency. This is in accordance with the registered/ revised approved PDD/B04/.

m. Parameter Failure Days

The total number of days boreholes include in the project are non-functional during the monitoring period
The parameter is monitored based on the repair confirmation forms, that record the failure days of boreholes. The reported value for the parameter is 188 and Functionality is 99.2%. The parameter is monitored on an ongoing basis, i.e. whenever a complaint is registered. This is in accordance with the registered/ revised approved PDD/B04/.

n. Parameter Hygiene Campaigns

Hygiene campaigns carried out among project technology users
The parameter is monitored based on WASH trainings/13/ conducted during the reported monitoring period. The parameter is monitored on an annual basis. This is in accordance with the registered/ revised approved PDD/B04/.

o. Parameter Incidences of water-borne diseases

Respondents suffering stomach-related illnesses/waterborne diseases
The parameter is monitored based on project surveys conducted during the reported monitoring period. The reported value for the parameter is 100% Never. The parameter is monitored on an annual basis. This is in accordance with the registered/ revised approved PDD/B04/.

Ex-Ante Parameters:

Parameter:	$EF_{b,fuel,co2}$

Default values used:	112 tCO_2/TJ (ex-ante value as per the PDD/ /B04/ and the methodology TPDDTEC, version 1/B02/)
Purpose of data	Calculate ERs
Source and Verification of the source	The value of the parameter is based on the methodology TPDDTEC, version 1/B02/ and has been reported in the PDD/B04/. The parameter values are Calculated from IPCC defaults; Volume 2: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2, Table 2.5.

Parameter:	$EF_{b,fuel,non\ co2}$
Default values used:	9.460 tCO_2/TJ (Wood) 44.83 tCO_2/TJ (Charcoal)
Purpose of data	Calculate ERs
Source and Verification of the source	The value of the parameter is based on the emission factor and GWP of the gases CH_4 and N_2O. The emissions factor is sourced from IPCC default values and GWP values from the GHG protocol. The reported value has been cross-checked by the verification team.

Parameter:	$EF_{p,co2}$
Default values used:	112 tCO_2/TJ (ex-ante value as per the PDD/B04/ and the methodology TPDDTEC, version 1/B02/)
Purpose of data	Calculate ERs
Source and Verification of the source	The value of the parameter is based on the methodology TPDDTEC, version 1/B02/ and has been reported in the PDD/B04/. The parameter values are Calculated from IPCC defaults; Volume 2: 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2, Table 2.5.

Parameter:	$EF_{p,non\ co2}$
Default values used:	9.460 tCO_2e/TJ (Wood) 44.83 tCO_2e/TJ (Charcoal)
Purpose of data	Calculate ERs
Source and Verification of the source	The value of the parameter is based on the emission factor and GWP of the gases CH_4 and N_2O. The emissions factor is sourced from IPCC default values and GWP values from the GHG protocol. The reported value has been cross-checked by the verification team.

Parameter:	NCV_b
Default values used:	0.0156 TJ/ton (Wood) 0.0295 TJ/ton (Charcoal)
Purpose of data	Calculate ERs
Source and Verification of the source	The value of the parameter is based on the methodology TPDDTEC, version 1/B02/ and has been reported in the PDD/B04/. The values

	are sourced from IPCC. The reported value has been cross-checked by the verification team.

Parameter:	NCV_p
Default values used:	0.0156 TJ/ton (Wood) 0.0295 TJ/ton (Charcoal)
Purpose of data	Calculate ERs
Source and Verification of the source	The value of the parameter is based on the methodology TPDDTEC, version 1/B02/ and has been reported in the PDD/B04/. The values are sourced from IPCC. The reported value has been cross-checked by the verification team.

Parameter:	$W_{b,y}$
Default values used:	Default values used of 0.0004 is capped (Wood) and 0.0001 (Charcoal)
Purpose of data	Calculate ERs
Source and Verification of the source	The value of the parameter is based on the default value as per the methodology TPDDTEC, version 1/B02/ and has been reported in the PDD/B04/. The value is validated during registration by the validating VVB. The reported value has been cross-checked by the verification team.

Parameter:	$W_{p,y}$
Default values used:	Default values used of 0.0004 (Wood) and 0.0001 (Charcoal)
Purpose of data	Calculate ERs
Source and Verification of the source	The value of the parameter is based on the default value as per the methodology TPDDTEC, version 1/B02/ and has been reported in the PDD/B04/. The value is validated during registration by the validating VVB. The reported value has been cross-checked by the verification team.

Parameter:	C_j
Default values used:	40.05 % (Based on the baseline studies/08/ conducted in 2022.)
Purpose of data	Calculate ERs
Source and Verification of the source	The value of the parameter is based on the baseline project survey and has been reported in the PDD/B04/. The baseline project survey is sourced from the number of users that already use safe water from water sources such as boreholes.

Parameter:	Xboil
Default values used:	0 %
Purpose of data	Calculate ERs
Source and Verification of the source	The value of the parameter is based on the baseline study and has been reported in the PDD/B04/. The value is validated during

	registration by the validating VVB. The reported value has been cross-checked by the verification team.

Parameter:	$T_{b,y}$
Default values used:	1.43
Purpose of data	Calculating of SDG5
Source and Verification of the source	The value of the parameter is based on the baseline survey and has been reported in the PDD/B04/. The value is validated during registration by the validating VVB. The reported value has been cross-checked by the verification team.

Parameter:	$P_{p,y}$
Default values used:	3 Kg/ household (wood) 0.75 (charcoal)
Purpose of data	Calculating of SDG3
Source and Verification of the source	The value of the parameter is based on the baseline Survey and has been reported in the PDD/B04/. The value is validated during registration by the validating VVB. A correction has been applied by the PP in context of the charcoal value as the value for charcoal was not reported in the PDD/B04/. The reported value has been cross-checked by the verification team.

3.6 Monitoring responsibility

Verification team assessed the management systems of implemented monitoring plan of the project activity. The management system includes the roles and responsibilities, data collection, transfer and aggregation procedures, training of personnel/12/ (monitoring and maintenance/ repair), data storage and archiving and emergency procedures for the monitoring system. Based on the onsite visit interview with the personnel of Griot Consulting and CO2Balance (involved in the project monitoring and data collection, inspection of data storage log book & equipment's and document review), VVB confirms that the responsibilities and authorities for monitoring and reporting are appropriate and effective for the project type and hence in accordance with monitoring plan of the registered/ revised approved PDD/B04/ and applied monitoring methodology/B02/.

3.6.1 Accuracy of equipment

As per the registered monitoring plan as contained in the PDD/B04/, no monitoring equipment for the project requires calibration and all the equipment has been purchased for the monitoring period/18/, hence assessment of accuracy and calibration of the monitoring equipment is not applicable based on the technical specifications of the weighing scales/18/.

3.7 Deviation from and/or Revision of the registered monitoring plan

This is the third periodic verification for the project activity and after a thorough assessment during documents review, onsite visit interview with the stakeholders involved (User households, monitoring team and maintenance/ repair team), it can be concluded that 2 deviations have been approved for the project activity and a correction has been applied by the project proponent. The deviation has been to use cross-sampling of the 3 project activities and use a common result/19/ and delay in annual monitoring for GS7513/20/. The correction has been applied in context of the use of charcoal value for the ex-ante parameter $P_{b,y}$. As justified

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by the PP, the parameter is only used in the calculation of SDG 3 (Good Health and Wellbeing), and the outcome is unaffected by parameter $P_{b,y}$ as fuel used to boil water in the project scenario ($P_{p,y}$) is zero. Therefore, this correction has no impact on the SDG outcomes.

A design change has also been done during the monitoring period to revise the value of the ex-ante parameters C_j, X_{-boil}, and $T_{b,y}$. The design change has been approved prior to the submission of the issuance request.

3.8 Assessment of data and calculation of greenhouse gas emission reductions

The Project Proponent submitted all the relevant data and parameters required to be monitored to the verification team along with the monitoring report/01/. All the monitoring parameters are as per the registered/ revised approved PDD/B04/ and have been monitored and reported in the monitoring report/01/.

CCIPL reviewed the calculation worksheet /02/ for the emission reduction calculation for the monitoring periods MP3 for the project activity: 01/07/2021 to 30/06/2022. CCIPL confirms that the formulas, conversions, aggregations and factors are consistent with the monitoring plan in the PDD/B04/. The reported data was checked as follows:

- Necessary data for all the parameters required to be monitored in the registered/ revised approved PDD /B04/ were reviewed to ensure accuracy.
- The Project Household Database and Borehole records kept electronically /04/ was reviewed along with an interview with the person responsible for data entry and data review from the CO2Balance UK, to confirm the recording process during the monitoring period.

3.8.1.1 Calculation of baseline value

SDG 13:
The Project Proponent has submitted the spreadsheet showing the detailed calculation of baseline emissions and corresponding emission reduction for the project activity (GS7128).

The baseline emissions achieved by the project activity in year y are calculated as follows:

$$BE_{b,y} = B_{b,y} * (fNRBy * EF_{b,fuel,co2}) + EF_{b,fuel,nonco2}) * NCV_{b,fuel}$$

Where:
$B_{b,y}$ = Quantity fuel consumed in the baseline scenario.
f_{NRBy} = Country-specific default value for the fraction of non-renewable biomass.
$EF_{b,fuel,co2}$ = Emissions factor of fuel consumed in the baseline scenario (CO2).
$EF_{b,fuel,nonco2}$ = Emissions factor of fuel consumed in the baseline scenario (non- CO2).
$NCV_{b,fuel}$ = Net calorific value of fuel consumed in the baseline scenario.

Where:

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

Where:

$N_{j,y}$ Number of person days consuming water supplied by project scenario p through year y

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

$B_{b,y}$ Quantity of fuel consumed in baseline scenario b during the year y in tons

$Q_{b,y}$ Quantity of safe water in litres consumed in the project scenario p and supplied by project technology per person per day

$Q_{b,rawboil,y}$ Quantity of raw water boiled in the project scenario p per person per day

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$W_{b,y}$ Quantity of fuel in tons required to treat 1 litre of water using technologies representative of baseline scenario b during the project year y, as per Baseline Water Boiling Test

The above equation used for the calculation of emission reduction is in line with methodology /B02/ and registered PDD /B04/. The total baseline emissions for the monitoring period is 19,761 tCO_2e.

Total verified emission reductions during the reported monitoring period (i.e. MP3: 01/07/2021 to 30/06/2022, both days inclusive, is 16,757 tCO_2e which is based on the boreholes and the total amount of water provided to the users in the monitoring period.

SDG 3 (Good Health and Wellbeing):

$HAPR_y = ((P_{b,y} – P_{p,y}) / P_{b,y}) * U_{p,y}$

The value reported is 85.19 %

SDG 5 (Gender Equality):

The time spent collecting firewood in the project activity is given by the parameter $T_{p,y}$. The reported value during the monitoring period is 0.92.

SDG 6 (Clean Water and Sanitation):

The number of persons having access to safe water in the project activity is given by the parameter P_y. The reported value is 18,193.

3.8.1.2 Calculation of project value

SDG 13:

The project emissions for the project activity are calculated based on the equations provided below:

$$PE_{p,y} = B_{p,y} * ((f_{NRBy} * EF_{p,fuel,co2}) + EF_{p,fuel,nonco2}) * NCV_{p,fuel}$$

And:

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

The total project emissions for the monitoring period is 0 tCO_2e.

3.8.1.3 Calculation of Leakage

The leakage assessment of the project activity is done biennially and has been included in the MR/01/. The sources of leakage have been justified in the project activity as:

Leakage Component	Justification in the MR/01/	Assessment
The displaced baseline technologies are reused outside the project boundary in place of lower emitting technology or in a manner suggesting more usage than would have occurred in the absence of the project.	In all cases the baseline technologies displaced are three stones; these have no market value and are not a product as such. There is nothing limiting the use of three stone cooking across the country (the technology is lowest rung on the energy ladder and the price is zero), which is why this cooking method	The leakage source is not applicable to the project activity as justified in the MR/01/.

	is so widespread. In any case the primary purpose of these three rocks is for cooking so they will not be replaced/displaced in their entirety as a result of this project - which means they will not be reused outside the project boundary. This leakage source can therefore be discounted.	
The non-renewable biomass or fossil fuels saved under the project activity are used by non-project users who previously used lower emitting energy sources.	There is no evidence to suggest significant (if any) use of renewable energy for purifying water in the project region as found in the Baseline Water Surveys. Renewable energy used for purifying water would likely be animal dung or crop residues which will be used due to ease of availability/proximity to the home rather than due to a shortage of wood fuel, therefore it is an independent factor. This leakage source can therefore be discounted.	The leakage source is not applicable to the project activity as justified in the MR/01/.
The project significantly impacts the NRB fraction within an area where other CDM or VER project activities account for NRB fraction in their baseline scenario.	As the majority of participants collect wood from within the project boundary, it is not expected that the fNRB in other areas will be affected. There are currently no other CDM or VER projects in the project area.	The leakage source is not applicable to the project activity as justified in the MR/01/.
The project population compensates for loss of the space heating effect of inefficient technology by adopting some other form of heating or by retaining some use of inefficient technology.	The space heating effect of boiling water for purification purposes will be minimal, as the predominant use of baseline technology is for cooking. Therefore it is highly unlikely that another technology will be used for heating when	The leakage source is not applicable to the project activity as justified in the MR/01/.

	users no longer boil water.	
By virtue of promotion and marketing of new technology with high efficiency, the project stimulates substitution within households who commonly used a technology with relatively lower emissions, in cases where such a trend is not eligible as an evolving baseline.	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. Therefore, a value of 0 is applied for leakage.	The leakage source is not applicable to the project activity as justified in the MR/01/.

The leakage assessment has been carried out in accordance with the p.12/67 of the methodology, TPDDTEC, version 1/B02/.

3.9 Assessment of actual emission reductions with the estimate emission reductions in PDD

Estimated emission reduction in the PDD /B04/ and emission reduction reported in the MR /01b/ for the monitoring period was comprehensively assessed by the verification team, through document review /02/, /07/ and onsite visit interviews of the PP representatives.

Following table provides comparison of estimated/ex-ante value and actual emission reduction value for the reported monitoring periods:

GS ID	Estimated ER within the Monitoring Period tCO_{2e}	Actual ER within the Monitoring Period tCO_{2e}	Has any increase of ER's occurred?
GS7128	15,777 tCO_2e	16,757 tCO2e	Yes

In summary, verification team confirms the actual emission reduction is higher than the estimated ERs of the project activity for the reported monitoring period. The higher emission reductions is due to a higher value of usage rate monitored during the reported monitoring period as compared to ex-ante estimates. Based on the above, verification team concludes that, the cause for the increase of ER's for the current monitoring is appropriately justified by the PP, same has been verified and acceptable to the Verification team. Following is the summary of ER value /02/ calculated:

ER summary for Project Activity

Parameter	unit	2021	2022
BE_y[4]	tCO2e	8,495	8,262

[4] The emission reductions are calculated as a product of baseline emissions and a maximum usage rate of 0.95. The emission reductions furthermore account for the suppressed demand.

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PE_y	tCO2e	0	0
L_y	tCO2e	0	0
ER_y	tCO2e	8,495	8,262
Total	tCO2e	16,757	

3.10 Monitoring of Gold Standard Sustainability Indicators

Verification team checked the sustainable development indicator parameters through documents review /03/, /07/ and onsite visit interviews.

3.11 Grievance Mechanism and Legal Disputes

During onsite visit, the PP has confirmed that no legal disputes are applicable to the Project Activity. There are no grievances registered during the reported monitoring period. The log book/14/ was checked and it was observed that only maintenance and repair updates were registered and no grievances/ complaints registered during the monitoring period.

4. VERIFICATION FINDINGS

The findings of the verification are described in the following sections. The verification criteria (requirements), the means of verification and the results of verification are documented in detail in the verification protocol in Appendix A.

4.1 Compliance with the sustainability monitoring plan

Sustainability monitoring plan as contained in the registered PDD /B04/ has been monitored by the PP and the same is provided in the Monitoring report. Sustainability monitoring plan was assessed and verified by the verification team during onsite visit interview and by means of interview with the stakeholders, Griot personnel and CO2balance UK Ltd personnel.

The monitoring system complies with the sustainable monitoring plan. All the non-neutral parameters have been discussed in the monitoring report. The “way of monitoring” as stated in the revised and approved PDD/B04/ has been followed. The monitoring parameters and the data in the SDG matrix have been checked and cross-checked against the supporting documents. All mitigation measures have been put in place to prevent the violation of the “do no harm assessment” or to neutralise an SDG indicator.

4.2 Monitoring of Gold Standard SDG Indicators

Parameters that are monitored in accordance with the monitoring plan for data and parameters monitored and SDG indicators as referred in the PDD /B04/

SDG Indicator	Chosen SDG Impact in the registered GS PDD and monitoring report	Way of monitoring	Assessment	Verified SDG Impact
SDG 3: Good Health and Wellbeing	Reduction of Household Air Pollution	Household lists; Usage Survey; Water Consumption Field Test	The parameter is monitored through Household lists; Usage Survey; Water Consumption Field Test.	85.19% reduction in exposure to Household Air Pollution due to boiling water.
SDG 5: Gender Equality	Reduction in time spent collecting firewood per day	Project Survey	The parameter is monitored through Project Surveys. The parameter is calculated using the project surveys and the parameter quantifies the amount of time spent collecting water compared to the pre-project scenario. The amount achieved for the parameter is reduction in time spent collecting water across all the 3 project activities. The parameter was verified by the survey records provided and cross-checking the responses with the households.	Time spent collecting firewood has decreased during this monitoring period by: 0.51 hours per day
SDG 6: Clean Water and Sanitation	People gain access to safe water	Baseline study; Household lists; Usage Survey	The parameter is monitored based on the baseline study, household lists and usage survey. The value is monitored through the records of the households from the database. The amount achieved for the parameter is a total of 9,291 for the project activity reported in the monitoring period. The parameter was verified by the review of the database of the boreholes and the database of households.	Actual persons with access to safe water: 9,291

SDG 13: Climate Action	Emission Reductions	Project Survey; Household lists; Usage Survey; Water Consumption Field Test	The total emission reductions have been calculated based on the parameters listed in section 3.4 of the verification report. An assessment has been provided for each parameter separately.	16,757 tCO_2e

APPENDIX A: GOLD STANDARD VERIFICATION PROTOCOL

CCIPL's Checklist question	Ref.	MoV[5]	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?	/1/	DR,	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?	/1/	DR	Methods to monitor data have not changed as compared with the monitoring plan in the registered passport and monitoring plan.	OK	OK
1.3 Has the way of monitoring been followed? With the inclusion of dates and parameters?	/1/	DR	The sustainability monitoring plan has been followed as per described in the Passport.	OK	OK
1.4 Have mitigation measures been put in place to prevent the risk of the violation of the safe guarding principle of "Do No Harm" assessment or to neutralise a Sustainable Development Indicator that is being monitored?	/1/	DR	The mitigation measures have been put in place that has been put in records as a proof of the same. Several supporting documents as listed under section 2.1 have been provided. Also, the onsite visit interview of the households and interviews of the trained personals of PP were performed during on onsite visit interview.	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?	/1/	DR and onsite visit interview	Yes, all data in the sustainability development matrix have been verified and cross checked from the supporting documents and during onsite visit audit.	OK	OK
2. Other					

[5] MoV = Means of Verification, DR = Document Review, I = Interview, www = internet search.

CCIPL's Checklist question	Ref.	MoV[5]	Findings, comments, references, data sources	Draft conclusion	Final conclusion
2.1 Are there any issues from the previous validation/verification? (ie FARs, requests / approvals for RMP)	/1/ /B03/	DR	No	OK	OK
2.2 Has the project ever received any requests for reviews or incompletes from the UNFCCC or GS Secretariat?	/1/ /B03/	DR	No, there are no request for reviews or incomplete for the project.	OK	OK
2.3 The evaluation of the status of mitigation and compensation measures has been verified.	/1/ /B03/	DR	Yes, the status of mitigation and compensation measures has been verified.	OK	OK

APPENDIX B

CARBON CHECK Certification statement for the Verification Report
1643/VER/GS/KBP/21122022

Carbon Check (India) Private Ltd., the VVB, has performed the 3rd periodic verification of the GS4GG Project Activity "VPA 6 Kilifi Borehole Rehabilitation Project (GS7128)" with the GS registry number GS7128.

The project activity is designed to generate emission reductions by providing safe drinking water to the target end users, the project will ensure that households consume less firewood and charcoal during the process of water purification and as a result there shall be a reduction of carbon dioxide emissions from the combustion process.

The project participants are responsible for the collection of data in accordance with the monitoring plan and the reporting of GHG emissions reductions from the project. It is VVB's responsibility to express an independent verification statement on the reported GHG emission reductions from the project. The verification is carried out in accordance with the VVS and GS4GG requirements.

Verification was performed to identify the compliance of the project activity with implementation and monitoring requirements and to verify the actual amount of achieved net emission reductions, through obtaining evidence and information and by conducting onsite visit that includes:

i) To confirm whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied and

ii) To check the evidence supporting the reported data.

The VVB had raised 09 CLs and 04 CARs, all the CARs and CLs have been closed. There are no FARs raised during the verification.

The VVB with reasonable assurance confirms that reported net GHG emission reductions were calculated correctly on the basis of the approved baseline and monitoring methodology and the monitoring plan (as contained in the registered/ revised approved PDD) and are fairly stated.

The VVB, hereby certifies that the project activity, achieved net emission reductions of 16,757 tCO_2 equivalent and all monitoring requirements have been fulfilled and is substantiated by an audit trail that contains evidence and records.

APPENDIX C: Clarification requests, corrective action requests and forward action requests

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

FAR ID	xx	**Section no.**	xx	**Date:** DD/MM/YYYY
Description of FAR				
CME response				**Date:** DD/MM/YYYY
Documentation provided by the CME				
GS VVB assessment				**Date:** DD/MM/YYYY

Table 2. CLs from this verification

CL ID	01	**Section no.**	B.1.1 of MR	**Date:** 28/02/2023
Description of CL				
In the section B.1.1 of the MR, PP shall list any FARs raised during the previous verification (MP2) or validation of the VPAs.				
CME response				**Date:** 07/03/2023
There were no FARs raised in the previous verification or from the preceding design change				
Documentation provided by the CME				
GS VVB assessment				**Date:** 23/03/2023
CME has clarified that no FARs have been raised in the previous verification. CME shall also provide the GS Feedback form for the performance review during the previous monitoring period. CL01 remains open.				
CME response				**Date:** 11/04/2023
'GS7128_GS4GG Performance Review_Final Round' has been uploaded for previous monitoring period. Please note CARs that are still open in this document were closed over a call. This is the latest form available. *'GS7128_GS7513_GS7692_Design Change_Final Round' has been uploaded. This is the most recent feedback round for GS7513 and GS7692.*				
Documentation provided by the CME				
GS7128_GS4GG Performance Review_Final Round *GS7128_GS7513_GS7692_Design Change_Final round*				
GS VVB assessment				**Date:** 24/04/2023
CME has provided the performance review feedback form and it is confirmed that there are no FARs raised during the previous verification. **CL01 is closed.**				

CL ID	02	**Section no.**	B.2 of MR	**Date:** 28/02/2023
Description of CL				

In the section B.2 of the MR, PP shall clarify if the post registration changes have already been approved or are being proposed in the reported monitoring period.
CME response **Date:** 07/03/2023
Section B.2 has been updated to differentiate between approved post-registration changes and corrections for this upcoming verification.
Documentation provided by the CME
GS VVB assessment **Date:** 23/03/2023
PP has updated the section B.2 of the MR to indicate the already approved design changes and the changes proposed in the reported MR. **CL02 is closed.**

CL ID	03	**Section no.**	B.2 of MR	**Date:** 28/02/2023
Description of CL				
1. *In the Validation Opinion for the design change of the VPA-DD, it is stated that the VPA6 is "…convert GS registered micro scale VPA (GS7128) to small scale standalone project." PP shall clarify, how the VPAs are being submitted as component VPAs if they have been converted as standalone small-scale project activities.* 2. *The PoA details for the VPAs are not provided in the KPI section of the MR.*				
CME response				**Date:** 10/03/2023
1. *Prior to the most recent Design Change, these projects were homogenous micro-scale VPAs. The change from homogenous micro-scale VPAs to standalone small-scale VPAs had no impact on the running of the programme. As such we have continued to treat them as homogenous standalone small-scale VPAs.* 2. *As these VPAs are standalone, they have no PoA, and as such there are no PoA details to include in the KPI section of the MR.*				
Documentation provided by the CME				
GS VVB assessment				**Date:** 23/03/2023
1. PP has clarified that the VPAs have been changed to small scale standalone project activities. However, it is not clear how a single sampling plan has been used for all three project activities. CL03.1 remains open. 2. Since, the VPAs are standalone project activities, they may not be reported in a single monitoring report and separate monitoring reports shall be provided for the project activities. CL03.2 remains open.				
CME response				**Date:** 11/04/2023
1. *As the VPAs were once bundled together they used the same sampling plan for all. In the validated PDDs, the VPAs were cross sampled. In the future, the VPAs will be monitored separately with separate samples. Deviation request regarding cross sampling has been approved and shared with the VVB. Updates have been provided in the MRs.* 2. *Monitoring reports have now been separated.*				
Documentation provided by the CME				

GS7128_MP3_MR_v4 *GS7513_MR_v4* *GS7692_MR_v4* *T-V5.0-Deviation-Request-Form_GS7128-GS7513-GS7692*
GS VVB assessment **Date:** 23/06/2023
1. PP has applied a deviation request approved by GS to use cross-sampling of the 3 project activities and use a common result. CL03.1 is **closed**. 2. PP has provided separate monitoring reports for each of the project activity. CL03.2 is **closed**.

CL ID	04	**Section no.**	C of MR	**Date:** 28/02/2023
Description of CL				
In the section C of the MR, the role of Griot Consulting in the VPAs has not been provided.				
CME response				**Date:** 06/03/2023
Griot Consulting has now been mentioned in Section C of the MR.				
Documentation provided by the CME				
GS VVB assessment				**Date:** 23/03/2023
PP has indicated the role of the implementation partner Griot Consulting in the section C of the MR. **CL04 is closed.**				

CL ID	05	**Section no.**	C of MR	**Date:** 28/02/2023
Description of CL				
1. *In section D.4 of the MR, the sample size calculation for the Project Survey, Usage Survey and WCFTs has not been provided to the verification team.* 2. *The precision level achieved based on the sampling results is not provided in the section D.4 of the MR.*				
CME response				**Date:** 06/03/2023
1. *Random sample working has now been provided to the VVB* 2. *Precision level achieved based on the sampling results has been clarified in section D.4 – WCFT and Usage Survey.*				
Documentation provided by the CME				
Kilifi Random Sample 2022 v2				
GS VVB assessment				**Date:** 23/03/2023
1. The basis of sample size for Usage Surveys has not been provided in the section D.4 of the MR. CL05.1 remains open. 2. PP shall provide the calculation sheet for the precision level. Also, the method used to identify outliers for WCFTs is not provided. CL05.2 remains open.				
CME response				**Date:** 11/04/2023

1. *As per TPDDTEC v1, the minimum sample size for the project and usage survey is 100. This has been met and clarification has been added in section D.4 of the MR.*

2. *Calculation sheet is the CDM sampling tool "Guideline: Sampling and surveys for CDM project activities and programmes of activities Version 03.1". This has been explained in section D.4 of the MR, within the text regarding the relevant surveys – Usage Survey and WCFT.*

   The outlier analysis method has now been explained in section D.4 of the MR. It is also visible by following the formulas in the WCFT excel document WCFT_Kilifi_2022_v1, cells BD221 to BD225.

Documentation provided by the CME

GS VVB assessment	**Date:** 24/04/2023

1. *CME has clarified that the sample size is based on the minimum size indicated on the p.24/66 of the methodology TPDDTEC, v1. Thus, the applied sample size is acceptable to the verification team.* ***CL05.1 is closed.***
2. The calculation sheet for the precision level has not been provided to the verification team to cross-check the data. CL05.2 remains open.

CME response	**Date:** 19/06/2023

See "Meth_guid48Calculator_Kilifi". For WCFT, see SRS-mean tab, cells C34-40. For Usage Survey, see SRS-proportion tab, cells C18-23.

Documentation provided by the CME

Meth_guid48Calculator_Kilifi.xls

GS VVB assessment	**Date:** 26/06/2023

1. **Closed**.
2. PP has provided the calculation sheet for the precision level for the WCFTs. The precision level determined based on the calculation sheet is 6%. CL05.2 is **closed**.

CL ID	06	**Section no.**	D.2 of MR	**Date:** 28/02/2023

Description of CL

In the section D.2 of the MR, the details of the monitoring equipment used for WCFTs have not been provided. PP shall also provide the manufacturer specifications and calibration records of the equipment used for monitoring WCFTs.

CME response	**Date:** 16/03/2023

Documents uploaded to DropBox. This includes the technical specifications of the scales, the receipt of purchase showing it was new, and photos of the scale in use.

Documentation provided by the CME

Technical_specs_scales.pdf

Weighing Scale Receipt.pdf

Photos of scales in use – download file to view

GS VVB assessment	**Date:** 26/06/2023

PP has provided the manufacturer specifications for the weighing scales and the purchase receipt to demonstrate that the scales have been bought recently. CL06 is **closed**.

CL ID	07	Section no.	D.2 of MR	Date: 28/02/2023
Description of CL				
In the section D.2 of the MR, for the parameter $f_{NRB,i,y}$, the frequency of monitoring shall be clarified and confirmed under what situation would the parameter be updated.				
CME response				**Date:** DD/MM/YYYY
Clarification added to section D.2 of the MR. fNRB,i,y will be updated if significant changes to the data occur.				
Documentation provided by the CME				
GS VVB assessment				**Date:** 23/03/2023
PP has clarified that the parameter would be updated "*if significant changes to the data occur.*" PP shall clarify what changes would be used as indicators to make the change. CL07 remains open.				
CME response				**Date:** 11/04/2023
PP has clarified that the parameter would be updated if significant changes to the data used in the fNRB calculation occur, such as wood fuel use, population, renewable biomass availability, or expiry of CDM value. *PP undertakes literature research and follows in-country partner advice related to the country-specific changes in wood fuel consumption. The project surveys we carry out during our annual monitoring also allow us to observe any significant changes.* *As per the VPA-DD, the value for fNRB has been updated from the expired 2017 CDM value of 0.92 and is now 0.93, as per Kenya_fNRB Report_20 July 2021. This clarification has now been included in section B.2.4. As no significant change in fNRB value occurred, PP considers that the value would be updated only if any of the significant changes described above occur.*				
Documentation provided by the CME				
GS VVB assessment				**Date:** 24/04/2023
PP has clarified that the parameter would be updated if significant changes to the data used in the fNRB calculation occur, such as wood fuel use, population, renewable biomass availability, or expiry of CDM value. PP shall clarify how it was assessed for the reported monitoring period that the parameters listed did not have significant changes. CL07 remains open.				
CME response				**Date:** DD/MM/YYYY
The provided value from the C4 Ecosolutions report falls within this current monitoring period for GS7128, GS7513. There was no need to assess the parameters in these monitoring periods. *For GS7692 (and applies to the other projects) where the report falls outside of the monitoring period, the report used a dataset from Hansen et al (https://www.science.org/doi/abs/10.1126/science.1244693) which is still regarded as the most accurate and up-do-date information for forest cover change, there is no more recent data which would remain accurate when updating the fNRB. Furthermore, the fNRB value used in the projects remains conservative, as deforestation and population levels have both increased, which would in turn increase the fNRB value.*				
Documentation provided by the CME				
Kenya_fNRB Report_20 July 2021				

GS VVB assessment	Date: 26/06/2023
PP has clarified that the fNRB report from C4 Ecolutions falls within the monitoring period and more accurate and up-to-date information is not available for forest cover change, thus the values continue to remain valid. CL07 is **closed**.	

CL ID	08	Section no.	D.2 of MR	Date: 28/02/2023
Description of CL				
In the section D.2 of the MR, the monitoring of the safeguarding monitoring parameters has not been provided.				
CME response				**Date:** 06/03/2023
PP unsure of the meaning of this CL. Clear reference to the relevant SDGs have been added to sections D.1 and D.2. Please clarify				
Documentation provided by the CME				
GS VVB assessment				**Date:** 23/03/2023
In section D.1 of the revised PDD for the project activities, mitigation measures for the safeguarding principles has been provided. However, the corresponding monitoring parameters have not been reported in the section D.2 of the MR.				
CME response				**Date:** 11/04/2023
Principle 3 mitigation measures has been included in section D.4 of the monitoring report, *Regarding principle 6.2, benefits to community members is monitored through SDG 5 – Usage of time saved on firewood collection.*				
Documentation provided by the CME				
GS VVB assessment				**Date:** 24/04/2023
The mitigation measures identified by the PP have been listed in the section D.2 of the monitoring report. **CL08 is closed.**				

CL ID	09	Section no.	D.2 of MR	Date: 28/02/2023
Description of CL				
In the section D.2 of the MR, the monitoring frequency of $U_{p,y}$, $Q_{p,cleanboil,y}$, $Q_{p,rawboil,y}$, $P_{p,y}$, $T_{p,y}$, Usage of time saved on firewood collection, $P_{,y}$, Quality of Treated Water is annual and the monitoring has been done once. However, the monitoring period for VPA16 (GS7513) is more than one year. PP shall clarify how the value can be applied for a period of more than 1 year.				
CME response				**Date:** 06/03/2023
Annual monitoring was conducted for all VPAs to be within 3 months of the end of the monitoring period (30/06/2022). Monitoring could not have been conducted one year before this for VPA 16 as this would have only been 3 months into its monitoring period. The results from the annual monitoring in 2022 are still representative of the situation in the region. *Changes to the field team, and new COVID-19 variants limited the ability of the field staff to conduct the annual monitoring towards the end of 2021 (within 12 months of VPA16's monitoring period). A fifth wave was occurring at the end of 2021 which threatened the safeguarding of community members from COVID-19. Annual monitoring was conducted alongside the other two VPAs for logistical reasons. See: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8902869/*				

Monitoring will be conducted within 12 months following this point for all VPAs.
Documentation provided by the CME
GS VVB assessment **Date:** 23/03/2023
PP has clarified that the annual monitoring was conducted for the VPAS within 3 months of the end date of the monitoring period. However, for VPA 16, the sampling has been conducted at a lesser frequency than the monitoring plan. PP shall apply appropriate deviation in this regard and get it approved by SustainCERT. CL09 remains open.
CME response **Date:** 11/04/2023
Deviation request approved by SustainCert.has been shared with the VVB
Documentation provided by the CME
T-V5.0-Deviation-Request-Form_GS7513_COVID_DEV_359.pdf
GS VVB assessment **Date:** 26/06/2023
PP has received a deviation request approval with regards to using the sampling data for a period of more than one year. CL09 is **closed**.

Table 3. CARs from this verification

CAR ID	01	**Section no.**	MR	**Date:** 28/02/2023
Description of CAR				
The MR template has been altered by the PP including the heading of SECTION A, SECTION B, SECTION C, SECTION D, SECTION E, SECTION F and SECTION G.				
CME response				**Date:** 08/03/2023
Fonts of headings of sections A-G have been changed from 'Verdana (body)' to 'Verdana (headings)'.				
Documentation provided by the CME				
GS VVB assessment				**Date:** 23/03/2023
PP has rectified the respective headings of the sections in the Monitoring Report. **CAR01 is closed.**				

CAR ID	02	**Section no.**	D.1 of MR	**Date:** 28/02/2023
Description of CAR				
1. *In the section D.1 of the MR, the values for the ex-ante parameters C_j, X_{boil} and $T_{b,y}$ are not consistent with the values reported in the section B.6.2 of the VPA-DDs.* 2. *In the section D.1 of the MR, the values for charcoal have been provided. However, such values are not reported in the section B.6.2 of the VPA-DDs.*				
CME response				**Date:** 08/03/2023
1. *The baseline has been updated, which has updated the ex-ante parameters of Cj, X-boil, and Tb,y.* *Design change to update the PDD will be submitted.* 2. *Will respond to this next round*				

Documentation provided by the CME	
GS VVB assessment	**Date:** 26/06/2023
1. The design change request has been provided by the PP with regards to the parameters. **CAR02.1 is closed**. 2. Pending on the response. CAR02.2 remains open.	
CME response	**Date:** 26/10/2023
1. *Design change has been approved and PDD now includes the updated values for Cj, Xboil, and Tb,y. Updates have been made in the relevant sections of the MR.* 2. *Design change has been approved and PDD now includes values for charcoal in section B.6.2. Updates have been made in the relevant sections of the MR,*	
Documentation provided by the CME	
GS7128_MP3_MR_v5_CL *GS7513_MP1_MR_v5_CL* *GS7692_MP1_MR_v5_CL* *GS4GG Design Change Review 7128 Final 19102023* *GS7128 VPA 6 VPA-DD_v12_CL* *Kenya_GS7128_Small_Scale_Ex_Ante_calculations_v2* *GS4GG Design Change Review 7513 Final 23102023* *GS7513 VPA 16 VPA-DD_v13_CL* *Kenya_GS7513_Small_Scale_Ex_Ante_calculations_v2* *GS4GG Design Change Review 7692 Final 19102023* *GS7692 VPA 28 VPA-DD_v10_CL* *Kenya_GS7692_Small_Scale_Ex_Ante_calculations_v2*	
GS VVB assessment	**Date:** 01/11/2023
1. The PDD version 12, dated 03/10/2023 with the approved design change has been provided to the verification team and the value for the parameters *Cj, Xboil, and Tb,y* is consistent with the MR. **CAR02.1 is closed**. 2. The value for the Pb,y for charcoal as provided in the section D.1 of the MR is not provided in the section B.6.2 of the PDD. CAR02.2 remains open.	
CME response	**Date:** 07/11/2023

2. When completing the monitoring report it was noticed there was an editorial error in the PDD where the weighted $P_{b,y}$ value was not weighted by charcoal as included in the approved baseline fuel mix. The default values for $W_{b,y}$ for wood and charcoal used to calculate this weighting are included in the parameter boxes in the approved PDDs.

The MR has been updated to include this correctly weighted calculation for $P_{b,y}$, using the approved $W_{b,y}$ default values for wood and charcoal.

The updated equations have no impact on the SDG outcomes. $P_{b,y}$ is not included in emission reduction calculations, only for SDG 5. SDG 5 is unaffected by the updated weighting.

Documentation provided by the CME

GS7128_MP3_MR_v6_CL

GS7513_MP3_MR_v6_CL

GS7692_MP3_MR_v6_CL

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GS VVB assessment | **Date:** 08/11/2023

1. Closed.
2. PP has clarified that the editorial error in the PDD that did not consider the fuel mix based on Wood and Charcoal was not considered and instead a value for wood was reported. The value for charcoal is based on the default value as per the methodology and thus has been accepted by the verification team. CAR02.2 is closed.

CAR ID	03	**Section no.**	E.1 and E.2 of MR	**Date:** 28/02/2023

Description of CAR

In the section E.1 and E.2 of the MR, the total baseline emissions and project emissions for each VPA and total during the monitoring period has not been provided.

CME response | **Date:** 10/03/2023

Baseline and project emissions updated in sections E.1 and E.2 of the MR. Adding a calculation for total baseline emissions calculation would not be clear as the totals are added together and cannot be calculated **as a whole**. This is due to each VPA rounding down values.

Documentation provided by the CME

GS VVB assessment | **Date:** 23/03/2023

PP has clarified that the total value of baseline emissions and project emissions would not be clear as the total ERs are rounded down. However, PP could provide the baseline emissions and project emissions as presented in the ER sheet in the sections E.1 and E.2 of the MR. CAR03 remains open.

CME response | **Date:** 11/04/2023

PP has added total values for baseline and project emissions in sections E.1 and E.2 of the MR. However, it is unclear which section of the ER calcs the VVB is referring to for this calculation.

Documentation provided by the CME	
GS VVB assessment	**Date:** 24/04/2023
The total values for the baseline emissions and project emissions are presented in the sections E.1 and E.2 of the MR. **CAR03 is closed.**	

CAR ID	04	**Section no.**	Table 1, E.4 and E.5 of MR	**Date:** 28/02/2023
Description of CAR				
1. *The value for the SDG Impacts as reported in the Table 1 of the MR are not consistent with the values reported in the sections E.4 and E.5 of the MR.* 2. *PP shall clarify how the parameter for SDG3 has been monitored as reported in the Table 1 of the MR.*				
CME response				**Date:** 13/03/2023
1. *SDG impacts in table 1, and sections E.4 and E.4 are now consistent* 2. *Explanation of ex-ante calculation of SDG 3 has been updated in section E.5.1 of the MR, in line with the PDD.*				
Documentation provided by the CME				
GS VVB assessment				**Date:** 23/03/2023
1. PP has revised the values of SDG impacts to be consistent across Table 1, sections E.4 and section E.5. **CAR04.1 is closed.** 2. PP has provided the basis of calculation for SDG3 in the section E.5.1 of the MR. **CAR04.2 is closed.**				

Table 4. FARs from this verification

FAR ID	xx	**Section no.**		**Date:** DD/MM/YYYY
Description of FAR				
Project participant response				**Date:** DD/MM/YYYY
Documentation provided by the project participant				
GS VVB assessment				**Date:** DD/MM/YYYY

APPENDIX D

Certificates of Competence

Carbon CHECK

Carbon Check (India) Private Limited

Certificate of Competency

Mr. Anubhav Dimri

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, South Africa and Spanish speaking countries		

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

Carbon Check (India) Private Limited

Certificate of Competency

Willis Austine Ochieng Okumu

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 Kenya		

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

Expiry Date
02nd May 2024

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Carbon CHECK

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

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023