
VALIDATION REPORT


OFFGRID SUN S.R.L.

MAJI SAFI, MAISHA BORA
PROJECT

IN

KENYA

Organizational Unit:	Re Carbon Ltd.		
Project Title:	Maji Safi, Maisha Bora Project		
Project Number:	Client:	Current PDD Version:	
889	Offgrid Sun S.R.L.	3.5	
Date of First Issue:	Date of Current Version:	Version Number:	Number of Pages:
26/12/2022	26/05/2023	04	120
Summary:			
Host Country: Kenya			
Project is Reviewed Against:			
<input checked="" type="checkbox"/> Kyoto Protocol <input checked="" type="checkbox"/> UNFCCC CDM rules and regulations and associated documents <input checked="" type="checkbox"/> Gold Standard rules and regulations <input type="checkbox"/> Other (Please Specify)			
Methodology: GS Methodology for Emissions Reduction from Safe Drinking Water Supply			
Version: 1.0			
Average Annual Emission Reduction Estimate: 14,315 tCO ₂ e			
Project Size: <input type="checkbox"/> Large Scale <input checked="" type="checkbox"/> Small Scale <input type="checkbox"/> Micro Scale			
Type of Crediting Period:	Crediting Period Start Date:		
<input checked="" type="checkbox"/> Renewable <input type="checkbox"/> Fixed	01/08/2023		
Project Developers:	Offgrid Sun S.R.L. Makohaa Genius Watter PENWA Jerri Hydro Expert		
Validation Stages:			
<input checked="" type="checkbox"/> Desk Review <input checked="" type="checkbox"/> Site Visit <input checked="" type="checkbox"/> Follow-up Interviews <input checked="" type="checkbox"/> Resolution of Outstanding Issues			
Validation Findings: During the validation 48 Corrective Action Requests and 05 Clarification Requests were raised, all of which were closed out before the issuance of this validation report. No Forward Action Requests were raised during the validation all of which shall be addressed during the initial verification of the proposed project activity. In summary, it is Re Carbon Ltd.'s opinion that the project activity "Maji Safi, Maisha Bora Project" in Kenya, as described in the PDD, version 3.5, dated 05/05/2023, meets all relevant UNFCCC requirements for the CDM, GS and all relevant host Party criteria and correctly applies the baseline and monitoring methodology GS Methodology for Emissions Reduction from Safe Drinking Water Supply, version 1.0. Hence, Re Carbon Ltd. requests the registration of the proposed project activity as a GS project activity.			
Validation Team Leader:	Mr. Sandeep Kanda	Indexing Terms:	
Validation Team Members:	Ms. Öykü Yakupoğlu (Trainee Validator) Ms. Selen Cilasun (Trainee)	<input checked="" type="checkbox"/> No distribution without permission of the client or responsible organizational unit	

		Validator) Mr. Victor Gathogo (Regional Expert)	
Approved By (Technical Reviewer):	Name:	Signature:	<input type="checkbox"/> Limited Distribution
	Mr. Rohit Badaya		<input type="checkbox"/> Unrestricted Distribution

Abbreviations

BM	: Build Margin
CAR	: Corrective Action Request
CDM	: Clean Development Mechanism
CER	: Certified Emission Reduction(s)
CL	: Clarification request
CM	: Combined Margin
CO₂	: Carbon dioxide
CO₂e	: Carbon dioxide equivalent
DNA	: Designated National Authority
DOE	: Designated Operational Entity
DR	: Document Review
EF	: Emission Factor
EIA	: Environmental Impact Assessment
ER	: Emission Reductions
ERPA	: Emission Reduction Purchase Agreement
FAR	: Forward Action Request
FSR	: Feasibility Study Report
GHG	: Greenhouse gas(es)
GS	: Gold Standard
GS4GG	: Gold Standard for Global Goals
GWP	: Global Warming Potential
I	: Interview
IPCC	: Intergovernmental Panel on Climate Change
IRR	: Internal Rate of Return
kWh	: Kilo Watt Hour
LoA	: Letter of approval
MoV	: Means of Validation
MW	: Mega Watt
MWh	: Mega Watt Hour
NCV	: Net Calorific Value
NGO	: Non-governmental Organisation
ODA	: Official Development Assistance
OM	: Operating Margin
PDD	: Project Design Document
PD	: Project Developer(s)
tCO₂e	: Tonnes of CO ₂ equivalents
UNFCCC	: United Nations Framework Convention on Climate Change

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1. EXECUTIVE SUMMARY – VALIDATION OPINION

Re Carbon Ltd. performed the validation of the “Maji Safi, Maisha Bora Project” in “Kenya” between 30/08/2022 and 26/12/2022. The validation was performed on the basis of UNFCCC criteria for the Clean Development Mechanism (CDM), Gold Standard for Global Goals (GS4GG) and Host Party criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

As a result of this validation, Re Carbon Ltd. concludes the following:

- ☒ The review of the project design documentation and the subsequent follow-up interviews have provided Re Carbon Ltd. with sufficient evidence to determine the fulfillment of all stated criteria. In our opinion, the project meets all relevant UNFCCC requirements for the CDM and Gold Standard for Global Goals. Therefore, Re Carbon Ltd. recommends the project for registration by the Gold Standard.
- ☐ The review of the project design documentation and the subsequent follow-up interviews have not provided Re Carbon Ltd. with sufficient evidence to determine the fulfillment of all stated criteria. Therefore, Re Carbon Ltd. do not recommend the project for registration by the Gold Standard and will inform the project developer(s) and the Gold Standard on this decision.

2. INTRODUCTION

2.1. Objective

Re Carbon Ltd. was appointed by “Offgrid Sun S.R.L.” to perform the validation of the “Maji Safi, Maisha Bora Project” in Kenya through a contract, dated 26/07/2022. The objective of this validation activity is to have an independent third party for the assessment of the project design, and to ensure a thorough assessment of the proposed project activity against the applicable CDM and GS4GG requirements. In particular;

- the project's baseline is assessed against “GS Methodology for Emissions Reduction from Safe Drinking Water Supply”, version 1.0
- the project’s monitoring plan is assessed against “GS Methodology for Emissions Reduction from Safe Drinking Water Supply”, version 1.0
- the project’s additionality justification is assessed against the automatic additionality requirements
- the projects compliance with the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country legislation and sustainability criteria
- CDM Validation and Verification Standard for project activities version 3.0
- CDM Project Standard for project activities version 3.0
- GS4GG version 1.2 and other relevant GS4GG requirements

Validation is a requirement for all GS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of verified emission reductions (VERs).

2.2. Scope

The scope of the validation is the independent and objective review of the Project Design Document (PDD). The PDD is reviewed against the relevant criteria (see 2.1) and decisions by the CDM Executive Board, including the approved baseline and monitoring methodology. The validation was based on the guidance given in the CDM Validation and Verification Standard for project activities version 3.0, CDM Project Standard for project activities version 3.0, GS4GG version 1.2 and other relevant GS4GG requirements.

The validation team employed a risk-based approach to assess the completeness and accuracy of the claims and conservativeness of the assumptions in the PDD. The main focus of the validation team is to identify the significant risks for the project implementation and the generation of VERs. The validation is not meant to provide any consulting towards the project developers. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

The only purpose of the validation is its usage during the registration process as part of the GS project cycle. Therefore, Re Carbon Ltd. cannot be held liable by any party for decisions made or not made based on the validation opinion, that will go beyond that purpose.

2.3. GHG Project Description

“Maji Safi, Maisha Bora Project” is implemented by Offgrid Sun S.R.L., in collaboration with Genius Watter and local partners Makohaa (CBO), Jerri-Hydro Experts and PENWA. The project activity is located in Siaya County, in Western Kenya. The project is a Community level Water Treatment Technologies (CWT) project. With implementing of the project, users will obtain water from distribution locations with kiosks.

In the past, a water supply and treatment system was operated by PENWA (one of the project participants). The system is currently not working because of the technical and economic constraints. Current situation in the area is as follows:

- There are a few public boreholes, and none of them are in good condition.
- Some small-scale private companies pump lake water and sell it either untreated or after adding chemical tablets.
- There are water vendors that provide the neighborhood untreated lake water in jerry cans. The lake water that is pulled out is either consumed right away, or it is treated by being boiled with firewood and charcoal or adding chlorine.

The baseline scenario of the project activity is that users would have boiled water for drinking in the absence of the project activity. The purpose of the project activity is to introduce zero-emission technology for water purification in order to lower greenhouse gas emissions from boiling water.

The project is scheduled to begin renovations in 15/02/2023 and to provide clean water to the neighborhoods by renovating the current kiosks in 01/08/2023. Therefore, the start date of the project activity is chosen as 15/02/2023 and the start date of the crediting period is chosen as 01/08/2023. 5-year renewable crediting period will be applied to the project activity (i.e. total 15 years). First crediting period of the project is 01/08/2023 – 30/07/2028.

2.4. Parties Involved

Offgrid Sun S.R.L. is the private entity project participant in the project and host country is Kenya.

3. METHODOLOGY

The validation of proposed GS project activity includes the following phases:

- Assessment whether the project design of the proposed GS project activity meets the relevant CDM and GS requirements, via a desk review of the PDD between 30/08/2022 and 26/12/2022.
- Assessment whether the applied methodology “GS Methodology for Emissions Reduction from Safe Drinking Water Supply”, version 1.0, was applied correctly, including the baseline selection and monitoring plan.
- Assessment of the additionality argument of the project activity against the guidance given for automatic additionality in the design document template
- A physical site visit was conducted on 31/08/2022-03/09/2022 in order to assess the implementation process of the project activity and to confirm stakeholders’ comments.
- Assessment of data and calculation of greenhouse gas emission reductions.
- Issuance of the validation report
- Independent technical review (ITR)
- Approval of the validation report and request of registration

The Validation Protocol is used for the assessment of each requirement during the execution of validation activities and is given in Annex-1 of this validation report.

The Validation Protocol consists of two tables:

- Table 1 (GS-PDD-FORM, GS4GG and CDM Validation Requirements)
- Table 2 (Resolution of Corrective Action, Forward Action and Clarification Requests)

The usage description of Table-1 in the Validation Protocol is explained in Table 3-1 below:

Table 3-1: Explanation about Table-1 in the Validation Protocol

Question	Reference	MoV*	Findings, comments, references and document sources	Draft & Final Conclusion
The requirements related with the GS-PDD Form, GS4GG and CDM validation Standards and/ or Procedures	Gives reference to the legislation or documents where the relevant requirement is found	Explains how conformance with question is investigated. Examples of means of validation are Document Review (DR), Interview (I) and Not Applicable (NA)	Is used to elaborate and discuss the question and/or conformance to the question by giving related references and document sources based on which the finding is issued or evidence is checked	Either acceptable based on the evidence provided (OK), non-compliance with the requirement (CAR), further clarification (CL) due to insufficient, unclear or not transparent information, forward action request (FAR) that needs to be solved during the first verification

The usage description of Table-2 in the Validation Protocol is explained in Table 3-2 below:

Table 3-2: Explanation about Table-2 in the Validation Protocol

Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. to Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
The all CL, FAR and CARs determined during the draft validation report should be listed here	Gives reference to the checklist questions in Table-1 of Validation Protocol	Is used to summarize the responses by project developers regarding the non-conformities	Is used to summarize the responses by validation team and their conclusions

The Validation Protocol is written by the validation team in line with the descriptions above and all the CARs, CLs and FARs are listed in a transparent and clear manner.

3.1. Validation Team and ITR Selection

The appointment process of the validation team takes into account the technical area(s), sectoral scope(s), and the related host country experience required amongst team members for the accurate and thorough assessment of the project design. The relevant GS validation and previous ITR experiences are also assessed during the selection of the team members and the Independent Technical Reviewer (ITR), respectively. The validation team and ITR were assigned to this validation activity on 23/05/2022 (with a Team Change on 12/08/2022), taking all the above factors into consideration and as a result of a contract review process.

The validation team members and ITR are listed in Table 3-3 below:

Table 3-3: Validation team and ITR details

Name	Role	Host Country Experience	Scope Coverage	Technical Expertise	Financial Expertise	Involvement*
Sandeep Kanda	Team Leader	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	A, DR, R
Öykü Yakupoğlu	Trainee Validator	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A, DR, R
Selen Cilasun	Trainee Validator	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A, DR, R
Victor Gathogo	Regional Expert	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SV
Rohit Badaya	ITR	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	ITR

* Explanations for the abbreviations used for involvement types are as follows:

A : Administrative

DR : Desk Review

SV : Site Visit

RA : Remote Assessment

R : Reporting

ITR : Independent Technical Review

3.2. Desk Review of the PDD and Additional Documents

The basis for the validation activity is the PDD version 02, dated 02/08/2022 which was submitted to the validation team on the same day. This PDD was revised several times due to the raised CARs and CLs, version 3.5 dated 05/05/2023 being the final version. The PDD was assessed against;

- GS Methodology for Emissions Reduction from Safe Drinking Water Supply, version 1.0
- GHG Emissions Reduction & Sequestration Product Requirements, version 2.1
- Community Services Activity Requirements, version 1.2
- the Host Country criteria
- CDM Validation and Verification Standard for project activities version 3.0
- CDM Project Standard for project activities version 3.0
- GS4GG version 1.2 and other relevant GS4GG requirements
- and other relevant documents, rules and regulations listed in section 2.1 of this report

A list of all the documents that were reviewed can be found in Section 6 of this validation report.

3.3. Site Visit(s)

In line with paragraph 26 of the Sampling and surveys for CDM project activities and programmes of activities CDM sampling standard, version 09, the validation team has applied acceptance sampling approach through on-site interviews as part of validation. Applying paragraphs 30-32 of the sampling standard, version 09, a sample size of 18 households was chosen with one discrepant record. A sample size of 18 was determined, based on an AQL of 1% and UQL of 20%; producer risk 10% and consumer risk of 10 % each in determining the DOE's sample size Acceptance number. However, a still larger size than 18 was interviewed by the VVB during the on-site and no discrepant record was observed.

As a part of the validation activities a physical site visits was performed to the project activity site, details of which can be seen in the Table 3-4 below:

Table 3-4: Site visit details

Date	31/08/2022-03/09/2022		
Location	Siaya County		
Village Administrators and PENWA Officials Meeting- 02/09/2022			
#	Name	Title	Location/Organisation
1	Sospeter Obumba	Ag. Chairperson	PENWA
2	Paul Onyango	Committee Member	PENWA
3	Mary Ogolla	Secretary	PENWA
4	Thomas Achando	Member	PENWA
5	Consulate Ogoda	Treasurer	PENWA
6	Roders Ochieng	Committee Member	PENWA
7	Alice Achando	Village Officer (VO)	Usigu

8	Rael Agutu	VO	Got Umala
9	Jared Onunga	VO	Lul
10	Esther A Origo	VO	Got Wanbasa
11	Magdeline A Huba	VO	Uwamba
12	George Aswan	VO	Ururi Diere
13	Alice Ojunga	VO	Majengo
14	Erick o. Omuok	VO	Ugingo East Bar-Awendo
15	Washington O. Awuor	VO	Kalala South- Jusa Primary School
16	Lawi Obonyo	VO	Nyangera Chiro
17	Gadd otieno O.	VO	Kanyibok
18	Lazaro Orewe	VO	Uhanya
19	Zedekia Onyango	VO	Misori/Rapogi
20	John Atito Omena	VO	Nyangera
21	Jocinter Aketch		Lucy Onono Pri. School
22	Walter okumu		Angwenyo School
23	Mosens Ondiji	Water officer	Bondo Water
Local Chiefs			
24	Opundo Gordon Oyoyo	Senior Chief	Central Yimbo
25	Rabut Vicklise Opil	Senior Chief	North Yimbo
27	Osuru Manas Omondi	Senior Chief	Usenge
28	Paul Olang	Chief I	West Yimbo
PENWA Officials and Stakeholders			
30	Mary Ogolla	Secretary	PENWA
31	Sospeter Obumba	Chairperson	PENWA
32	Adams omondi	-	Makohaa
33	Thomas Achando	Member	PENWA
34	Eng. Ouma Jeremiah		JHE
35	Victor Odhiambo	Baseline enumerator	MAKOHAA
36	Joyce P Atieno	Baseline enumerator	Makohaa
Household Verification			
37	Agnes Alianda	House Wife	Yimbo
38	Merciline Anyango	House Wife	Usenge-Yimbo
39	Millicent Abunge	House Wife	Usenge-Yimbo
40	Vivian Anyango	House Wife	Usenge-Yimbo
41	Risper Oyugi	House Wife	Usenge-Yimbo
42	Rose Akoth	House Wife	Usenge-Yimbo
43	Susan Atieno	Business Woman	Usenge-Yimbo
44	Zerah Achieng	House Wife	Usenge-Yimbo
45	Winnie Adhiambo	House Wife	Usenge-Yimbo
46	Nerah Audo	House Wife	Usenge-Yimbo
47	Sharon Auma	Business Woman-Charcoal vendor	Usenge-Yimbo
48	Millicent Anyango	House Wife	Usenge-Yimbo

49	Queenter D	Water Vendor	Usenge-Yimbo
50	Dickson Onyango	House Wife	Usenge-Yimbo
51	Vivian Akinyi	House Wife	Usenge-Yimbo
52	Jackline A Okadi	House Wife	Usenge-Yimbo
53	Nelly Atieno	House Wife	Usenge Town
54	Hidayah Yusuf	House Wife	Usenge Town
55	Sharon Atieno	House Wife	Usenge Town
56	Jael Ogwe Otieno	House Wife	Usenge Town
57	Christin Atieno	Purified water vendor	Usenge Town
58	Pamela Anyango	House Wife	Usenge Town
59	Alice Okendo	House Wife	Usenge -Yimbo
60	Henry Oswago	House Wife	Usenge -Yimbo
61	Rose Achieng	House Wife	Usenge -Yimbo
62	Susan Adhiambo	House Wife	Usenge -Yimbo
63	Caren Oure	House Wife	Usenge -Yimbo
64	Sophia Odhiambo	House Wife	Usenge -Yimbo
Points Verified		Source of Information	
To confirm rightness of project description, as per GS PDD including project components and location		Document review and on-site audit interviews with the local stakeholders	
To check the project development and operation		Document review and on-site audit	
To interview with the local stakeholders about the project and its impacts		On-site audit interviews with the local stakeholders	

3.4. Reporting of Findings via the Validation Protocol

During the validation period, a Validation Protocol (attached in Annex 1 to this validation report) was used to submit the findings to the project developers.

As part of this validation report, please see “**Attachment to Validation Report / GS4GG Audit Techniques Template for Validation**” for details of Audit Techniques used and risk assessment.

In line with the “CDM Validation and Verification Standard”, the team reports the non-conformities in the form of Corrective Action Requests (CARs), Clarification Requests (CLs) and Forward Action Requests (FARs). When and for which type of non-conformities CARs, CLs and FARs are raised is explained below:

- The Validation team raises a **CAR** if one of the following occurs:
 - The project developers have made mistakes that influences the ability of the project activity to achieve real, measurable additional emission reductions
 - The CDM and/or GS4GG requirements have not been met
 - There is a risk that emission reductions cannot be monitored or calculated.

- The Validation team raises a **CL** if information is insufficient or not clear or not transparent enough to determine whether the applicable CDM and/or GS requirements have been met.
- The Validation team raises a **FAR** during validation to highlight issues related to project implementation that require review during the first verification of the project activity.

According to these principles total of 48 CARs, 05 CLs and 00 FARs were raised, all of which are listed in the Validation Protocol.

3.5. Follow-Up Interviews

During the validation period follow-up interviews were executed by the validation team in order to further analyze the correctness and accurateness of the information provided. A list of individuals interviewed is given in Section 5 of this Validation Report.

3.6. Resolution of Outstanding Issues

All issues raised as CLs and CARs during this validation activity, were resolved during the written and oral communications between the Project developer(s) and Re Carbon Ltd. validation team members. For the resolution of these non-conformities, the project developer(s) modified the project design, rectified the PDD or provided adequate additional explanations or evidence that satisfy the concerns of the validation team members.

Concerns raised in the desk review, the on-site audit assessments and the follow up interviews and the responses provided for the raised concerns are documented in Annex 1 (Validation Protocol) to guarantee the transparency of the validation process.

The validation timeframe is given in detail in Table 3-5 below:

Table 3-5: Validation Timeframe

Activity	Timeline		Total Days
	From	To	
Desk Review	30/08/2022	26/12/2022	119
Review of the PDD version 01	14/09/2022	17/09/2022	4
Site Visit	31/08/2022	03/09/2022	4
Issuance of the Validation Protocol version 01	17/09/2022	17/09/2022	1
Review of PDs Initial Set of Responses	03/11/2022	07/11/2022	5
Issuance of the Validation Protocol version 02	07/11/2022	07/11/2022	1
Review of PDs Second Loop Responses	08/12/2022	12/12/2022	5
Issuance of the Validation Protocol version 03	12/12/2022	12/12/2022	1
Review of PDs Third Loop Responses	13/12/2022	13/12/2022	1
Closing of all the CARs and CLs	13/12/2022	13/12/2022	1
Issuance of the Validation Report version 01	23/12/2022	26/12/2022	4
ITR Process	26/12/2022	18/01/2023	24
Issuance of the Validation Report version 02	12/01/2023	12/01/2023	1
Submission for Final Approval	18/01/2023	18/01/2023	1
Submission to the PD	18/01/2023	18/01/2023	1

Information or clarifications provided as a response to a CAR, CL or FAR could also lead to a new request. This can also be seen transparently in the Validation Protocol provided in Annex 1 of this Validation Report.

3.7. Internal Quality Control

As a final step of validation, the final documentation including the validation report and annexes must undergo an internal quality control by Re Carbon Ltd. This quality control is also referred to as the “Independent Technical Review” process.

The Independent Technical Review is performed by another Team Leader of Re-Carbon Ltd. who was not involved in the validation activities of this specific project activity. When the appointed Team Leader finalizes the Validation Report, the report is sent to the (for this project specifically appointed) Independent Technical Reviewer who reviews not only the validation report itself, but also all supporting documents such as the emission factor calculations, additionality justifications, relevant excel sheets etc.

Further CLs and CARs may be raised by the Independent Technical Reviewer during this review, in order to cover all the points that may need further clarification.

After all CLs and CARs are closed, the validation report is again reviewed and finally approved by the Team Leader, ITR and the Certification Manager, and the request for registration is submitted to the Project Developer along with the relevant documents.

4. VALIDATION FINDINGS

4.1. Participation Requirements

The project participant is Offgrid Sun S.R.L. This company is in collaboration with Genius Watter and local partners Makohaa (CBO) Jerri-Hydro Experts and PENWA in this project activity.

Through document review and on-site audit interview, Re Carbon Ltd. confirmed that the project participants as listed in PDD are correct. It is also confirmed that no entities other than those authorized as project participants are included in the relevant sections of the PDD.

4.2. Project Design

The Project Design Document (PDD) complies with the guidance given in the “Gold Standard for the Global Goals Key Project Information & Project Design Document (PDD)”, Version 1.2 issued by Gold Standard on 14/10/2020.

4.3. Project Description

“Maji Safi, Maisha Bora Project” is implemented by Offgrid Sun S.R.L., in collaboration with Genius Watter and local partners Makohaa (CBO), Jerri-Hydro Experts and PENWA. The project activity is located in Siaya County, in Western Kenya. The project is a Community level Water Treatment Technologies (CWT) project. With implementing of the project, users will obtain water from distribution locations with kiosks.

In the past, a water supply and treatment system was operated by PENWA (one of the project participants.) The system is not currently working because of the technical and economic constraints. PENWA water vending point was seen during the on-site visit.



Figure 1. PENWA water vending point

Also, technical constraints were indicated on the site. For example, the sand filtration tank of PENWA filled with weeds.



Figure 2. The sand filtration tank

Moreover, the pump station of PENWA at Nyamonye village was visited. The pump house located is powered by three-phase electrical grid where water is pumped from the lake to Kinda Umalla village where 3 concrete tanks are.

The pump house is energized by a 200kVA transformer which powers; (i) 30hp 3-phase induction motor, a water pump and mains which have the ON and OFF switches. Also in the facility, there is a 3-phase power meter.



Figure 3. Pump house energized by grid electricity



Figure 4. 3-phase meter at the pump house

The pump house is not easily accessible, as the water draining to the lake from nearby springs makes the road impassable during wet seasons.

Current situation in the area is as follows:

- There are a few public boreholes, and none of them are in good condition.



Figure 5. One of the public boreholes

- Some small-scale private companies pump lake water and sell it either untreated or after adding chemical tablets.
- There are water vendors that provide the neighborhood untreated lake water in jerry cans. The lake water that is pulled out is either consumed right away, or it is treated by being boiled with firewood and charcoal or adding chlorine.



Figure 6. Water vendors

Four water vendors were engaged the first and second day of the verification site visit. The water vendors sell water in the project location in the following ways:

- Diesel Generator and electricity pumping of water from the lake to various points and water is piped.
- Use of hand carts, bicycles and motorbikes to fetch and deliver water to various users.

Many of the vendors preferred to ferry water to end-users as the piped water vendors could only serve a certain catchment area. One bicycle could ferry 5-6 jerry cans per trip, and on a good business day, the vendors can sell up to 60 20L jerry cans averaging Kes. 600 per day as income with 10 trips covered to the lake. All the water vending points are metered to track water sold per day. Vendors indicated that some of their clients either preferred to treat the water for drinking by boiling or treating it with Water Guard, a local water treatment chemical sold in the market.



Figure 7. Water jerry cans

It was noted, that during the rainy season, households preferred to harvest water which does not need to be treated as stated by one of the respondents. Also, during this period, most water vendors expressed reduced business opportunities due to the availability of water.

The baseline scenario of the project activity is that users would have boiled water for drinking in the absence of the project activity. The purpose of the project activity is to introduce zero-

emission technology for water purification in order to lower greenhouse gas emissions from boiling water.

The main cooking technologies to boil water were

- Three stone firewood
- Kenya Ceramic Jiko
- Metal jiko

during the on-site visit.



Figure 8. Water boiling technology



Figure 9. Water boiling technology



Figure 10. One of the baseline fuels

Moreover, the evidence letter from PENWA dated 22/09/2022 regarding the system being non-operational and confirming no maintenance plan was made mainly due to the lack of funds. The evidence letter was provided to the VVB.

The project is scheduled to begin renovations in 15/02/2023 and to provide clean water to the neighborhoods by renovating the current kiosks in 01/08/2023. Therefore, the start date of the project activity is chosen as 15/02/2023 and the start date of the crediting period is chosen as 01/08/2023. 5-year renewable crediting period will be applied to the project activity (i.e. total 15 years). First crediting period of the project is 01/08/2023 – 30/07/2028.

The water in its improved form will be available within a distance of 1 km or less from the end-users. The map which includes water kiosks was provided to the VVB (The map is also included in Section B.4 of the PDD.) The total population is also check from Solstice database provided under mWater project. The data can be viewed at: https://share.solstice.world/v3/dashboard_link/c86d3cba3cf242d4a7b4f5892d6cfc14?share=d1ab413afdf24405835633afe55d1bfa

There are 4 FARs during the Preliminary Review to PD. 2 of the FARs have been closed. The other 2 FARs are as follows:

FAR #3: PD shall have the opinions of an expert stakeholder be provided for the following: Principle 4.1 Sites of Cultural and Historical Heritage; Principle 4.2 Forced Eviction and Displacement; Principle 4.3 Land Tenure and Other Rights; Principle 4.4 Indigenous Peoples; Principle 8.1 Impact on Natural Water Patterns/Flows; Principle 8.2 - Erosion and/or Water Body Instability; Principle 9.10 - High Conservation Value Areas and Critical Habitats; Principle 9.11 - Endangered Species

The answer to FAR #3: Jeremiah Ouma was hired as a consultant to the project on 30/03/2022 by OffgridSun to carry out the feasibility study of the project. He has carried

out the required assessment and presented the report for the mentioned safeguarding principles as required on 14/08/2022. The relevant study has been provided to the VVB.

FAR #4: The PD shall detail clearly with correct percentages the different methods of water purification employed in the baseline and the VVB shall validate the percentages provided.

The answer to FAR #4: In Table 8 in Section B.4, the percentages of the water purification methods are presented. These percentages have been confirmed by the validation team via the following reference links: <https://www.mdpi.com/1660-4601/19/8/4530/htm> and <https://iwaponline.com/jwh/article/16/2/263/38004/Water-treatment-and-handwashing-practices-in-rural>

There are also 2 FARs during the Preliminary Review to VVB. The 2 FARs are as follows:

FAR #1: VVB shall conduct interviews with the locals especially women at the time of the validations.

The answer to FAR #1: 64 local stakeholders (including women)/project participants were interviewed during the on-site visit between 31/08/2022-03/09/2022. The attendance list is available in Section 3.3 of this report. Details of current status learned from local stakeholders can be found in various sections of this validation report.

FAR #2: PDD lists more than 5 SDG Impacts, VVB shall assess this in detail during validation.

The answer to FAR #2: SDG 3, SDG 5, SDG 6, SDG 7, SDG 8, SDG 13 and SDG 15 are chosen for this project activity. These SDG contributions are found suitable by the validation team since:

- Since safely managed drinking water services will be provided to the local stakeholders, a significant decrease in water-borne diseases is expected. This situation will be monitored during the verification processes of the project activity (SDG 3: Good health and well-being)
- Since collecting wood and water boiling in the baseline scenario is predicted to take more time from women than the project scenario (because less wood will be required in the project scenario and water purification will not be needed), SDG 5 is chosen (Gender Equality). This situation also will be monitored during the verification processes of the project activity.
- Since safely managed drinking water services will be provided to the local stakeholders, It is directly related to the SDG 6 (Clean Water and Sanitation). Number of people reached through hygiene campaigns will be monitored.
- There is a contribution to SDG 7 (Affordable Clean Energy) as the required electricity will be supplied from solar panels. These electricity generated will be monitored via the electricity meters.
- As it is a new project, employment will be provided. For SDG 8 (Decent work and economic growth), number and type of jobs created will be recorded with employment status and duration during the verification processes of the project activity.

- Emission reductions will be achieved by fuelwood/charcoal savings at household level. Therefore, it is a contribution to SDG 13 (Take urgent action to combat climate change and its impacts)
- With the new technology, the total firewood and charcoal usage will be decreased. The total firewood and charcoal saved will be calculated based on the amount of water served. This situation is a contribution to SDG 15 (Life on Land).

There are 5 CARs during the Preliminary Review to PD. 1 of the CARs has been closed. The other 4 CARs are as follows:

CAR #2: Epicentre Africa has been mentioned as a project participant in the PDD. However, the cover letter does not include Epicentre Africa. Cover letter shall be signed by project developer, project representatives and all project participants. PD shall provide the updated cover letter.

The answer to CAR #2: Epicenter Africa was included during the design of the project but later signed out from the partnership. The final version of the PDD does not include Epicentre Africa as a project proponent.

CAR #3:

3) The PDD mentions that “Safe water will be supplied to end- users in households by smart water kiosks” in Section B.2. PD to clarify is metering will be done at household level or a centralized designated water kiosk points.

The answer to CAR #3.3: The connections will be done both by smart water kiosks and by limited number of domestic/private connections. Both the water supplied by the public kiosks and directly connected to the dwellings will be accounted in the project boundary and metered. The relevant information is included in Section B.2 of the PDD.

4) The PDD should provide more information on the water treatment methods/technology to be employed by the project.

The answer to CAR #3.4: Section A.3 of the PDD includes information on the water treatment methods/technology to be employed by the project.

6) PD shall provide a statement in the PDD that the project is not registered with any other voluntary or compliance schemes. Refer Annex A 4.1 of GHG Emission Reduction & Sequestration Product Requirements.

The answer to CAR #3.6: The statement is available in Section A.1.1 of the PDD.

CAR #4:

1) Section C.1.1: Start date of the project activity is inconsistent in the PDD, Stakeholder Consultation Report and Sustain-cert App. PD shall check on this inconsistency. Also, the data shall be provided in DD/MM/YYYY format.

The answer to CAR #4.1: The start date of the project has been revised as 15/02/2023 in PDD as the start date of field work. The evidence document has been provided to the VVB. The evidence for the start date is the progress report provided by the contractor company.

2) Section B.6.4: The SDG Impacts have been calculated from 01/06/2022 while the project start date mentioned is July 2022. PD shall check on this inconsistency.

The answer to CAR #4.2: The system is expected to be partly operational by 01/08/2023 and fully operational on 15/12/2023 and the SDG impacts are revised accordingly in the PDD and in the ER Calculation Excel sheet.

CAR #5:

1) Section A.3.: Negative (Safeguards) information stated as per draft PDD/or in a simplified form shall also be discussed during the Stakeholder Consultation and shall be provided in the SCR Report. PD shall explain how the requirements of Para 1.1.1 of Stakeholder Consultation and Engagement Requirements (version 1.2) met.

The answer to CAR #5.1: Safeguarding principles was discussed during the SCR. No negative feedback received from the stakeholders which is indicated in Stakeholder Consultation Report.

2) Section A.4: Additional information shall be supplied OR an adequate justification shall be provided if left blank. Refer Para 5.1.1(d) of Stakeholder Consultation and Engagement Requirements (version 1.2).

The answer to CAR #5.2: Adequate justification is provided in Section A.4 of the PDD.

3) Section E.2.: A description of the documents and methods used to seek comments shall be provided in the PDD.

The answer to CAR #5.3: Section E.2 of the PDD includes the methods and documents.

4) All stakeholders invited to participate in the first consultation should be invited to the Stakeholder Feedback Round. PD shall confirm how it has ensured that requirements of Para 9.1.2 of Stakeholder Consultation and Engagement Guidelines (version 1.2)met.

The answer to CAR #5.4: Those who invited by letter to the first meeting are also informed through SMS.

5) As the Stakeholder Feedback Round has already been conducted, PD shall include all relevant information in the SCR and PDD. PD shall submit revised documents for review.

The answer to CAR #5.5: SCR and PDD have been revised accordingly.

6) It is not clear from the stakeholders consultation report whether the mechanisms for carbon rights transfer was discussed in detail.

The answer to CAR #5.6: SCR has been updated accordingly.

4.4. Project Boundary

The boundary (geographically and related to GHG sources / sinks) are correctly given in section B.3 of the GS-PDD and justified for the project activity. The spatial extent of the project boundary is clearly defined in line with GS Methodology for Emissions Reduction from Safe Drinking Water Supply, version 1.0.

The whole infrastructure, including the intake pipes, storage tanks, distribution network, pumps, and kiosks that provide treated water to end consumers within a 1-kilometer radius of each kiosk, is included within the project boundaries.

All the GHGs allowed under the applied and applicable GS Methodology for Emissions Reduction from Safe Drinking Water Supply, version 1.0 is considered both in the baseline and project emissions (CO₂, CH₄, N₂O). There are no other sources which are impacted by the project and not addressed by the applied methodology.

The project boundary confirmed during the on-site audit along with the documentary evidence was found in conformance with the applied baseline methodology. All sources of GHG emissions required by the methodology have been included in the project boundary and are justified in reference to the project activity. There are no project emissions/leakage emissions of any sort which are not addressed by the applied methodology occurring because of the project activity.

4.5. Determination of the Baseline Scenario

As per GS Methodology for Emissions Reduction from Safe Drinking Water Supply, version 1.0, the baseline scenario of the project activity is that users would have boiled water for drinking in the absence of the project activity (i.e. the existing baseline fuel and technology for boiling water by end-user group).

The project comprises the end users who would have boiled water for drinking in the absence of the project activity and applies suppressed demand to the baseline scenario. The project activity is eligible for implementing suppressed demand. A series of questions in the baseline survey are asked to households about how they would prefer to purify drinking water if they were not subject to financial restrictions or energy poverty, and this information is used to calculate the suppressed demand value.

Based on the site-visit and by cross-checking the information with similar relevant projects, also based on the validation team's local and sectoral knowledge, it is confirmed that the selected baseline scenario is the prevailing practice in the host country and in line with the host country regulations.

All the assumptions and data used by the PPs are listed in the PDD, including references and sources, all the references and documents used are relevant for establishing the baseline scenario and correctly quoted in the PDD and the identified baseline scenarios reasonably represented what would occur in the absence of the proposed project activity.

4.6. Application of the Selected Baseline and Monitoring Methodology or Standardized Baseline

Re Carbon Ltd. has assessed the relevant information contained in the PDD, on-site audit and evidence obtained against the application criteria listed in the methodology. The applicability of this methodology is justified as below:

- Community Level Water Treatment Technology (CWT) will be implemented to supply clean water to East and West Yimbo.
- Water will be purified using a zero-emission solar-powered water treatment system. Solar energy will be used for every pump.
- Each service site in the Yimbo area will have a water maintenance team. The PENWA team members will receive trainings in system monitoring and maintenance. Maintenance and repair plan will be prepared by Jerri Hydro Expert.
- Existing pipeline system is not operational. This situation was confirmed during the on-site visit. To deliver water to the kiosk, the project owner will repair the current pipeline system.
- Smart water kiosks and proper connections will be used to supply clean water to the households.
- The water kiosk will be located within a 1 km radius of the residential end-users.
- The national standard for drinking water in Kenya shall be followed while performing water quality tests.
- The project team will hold yearly campaigns to educate end users about water hygiene.
- SDG 3, SDG 5, SDG 6, SDG 8, SDG 13 and SDG 15 contributions will be achieved by the project activity.

4.7. Additionality

The project is additional as per automatic additionality route: “Project activities that involves technologies and/or practices providing thermal energy to the use that have less than 20% adoption rate.” The PD provides the justification and the relevant evidence to demonstrate that the water treatment technology has an adoption rate less than 20% in Section B.5 of the PDD. Re Carbon Ltd. confirmed with reviewing evidence documents and reference links and conducting on-site visit that the water treatment technology has an adoption rate less than 20% in Kenya region.

4.7.1. Prior CDM consideration

Regular project cycle is applied for the project activity and demonstration of prior consideration is not required.

4.7.2. Project alternatives

N/A

4.7.3. Investment analysis

N/A

4.7.4. Barrier analysis

N/A

4.7.5. Common practice analysis

N/A

4.8. Monitoring

The monitoring parameters are in line with the applied methodology and include the following:

- $M_{q,y}$: ongoing water quality indicated as the fraction of the samples that pass microbial quality standard requirements
- Water hygiene education campaigns: hygiene campaigns carried out among project safe water end-users
- $X_{\text{cleanboil},y}$: proportion of project end-users that boil safe (treated, or from safe supply) water after installation of project technology
- $Q_{m,y}$: monitored quantity of safe water provided by the CWT project
- $HN_{p,y}$: number of individuals per premises type p in the project boundary in year y
- $HH_{p,y}$: number of premises type p served by the project in year y
- $DO_{p,y}$: days the project technology is operational for end-users in premises p in year y
- $EC_{p,y}$: quantity of electricity that is used by the project during year y
- LE_y : leakage emissions during year y
- Reduced incidents of water borne diseases: proportion of the households who experienced reduced incidents of water borne diseases
- Perception of time savings: proportion of the households who perceived reduced time for collecting wood and water boiling
- Total electricity produced – Renewable: Quantity of electricity that is produced by the solar panels during year y
- Jobs created: temporary and permanent jobs created during the implementation of the project
- Transfer of chlorine: the chemicals transferred and stored in impermeable containers

The applied methodology refers to these monitoring parameters. Re Carbon Ltd. has checked Data Unit, Description, Source of Data, Value(s) Applied, Measurement Methods and Procedures, Monitoring Frequency, QA/QC Procedures and Purpose of Data of these parameters in the applied methodology. All information for the monitoring parameters has been indicated correctly in the GS-PDD.

As the estimated population size is greater than 1,000 the minimum sample size should be over 100 as per item 4.3.2 of the applied methodology. Therefore, 145 (randomly selected) is an acceptable sample size.

In monitoring plan, there are some important points, such as date of installation of water kiosks, storage capacity of each kiosk, sample Plan for the Project Survey and so on. Each component of the monitoring plan will be implemented with assistance from the project developer.

Smart water kiosks and domestic/private connections will be used to provide clean water. Every water kiosk has a digital pre-paid water meter installed. By utilizing a tag, system users can obtain water from a tap. The tag securely holds customers water credit and identification. Tags can be charged with mobile money or by a local water vendor. The cloud-based management system offered by Lorentz technology will enable the virtual recording and storage of information on the water use per day at each kiosk.

The total amount of water sold will be measured both at the tank outlets and at the pump house. These meters are:

- Bulk master meter at the pump house
- Sub-water meters at the tank outlets

The metering of each private connection will be done at the mainline point.

Moreover, Water, Sanitation and Hygiene (WASH) training at community level will be held annually to promote best WASH practices.

Each water system component's basic routine maintenance program will be on daily, weekly, monthly, quarterly, and yearly routines and noted in the maintenance list book. The daily management of the water treatment plant and distribution system will be handled by the skilled PENWA operations staff and technical team. The Operations Supervisor is in charge of organizing service orders and carrying out the maintenance and repair plan. During the project implementation phase, Jerri-Hydro Experts will teach operators from PENWA in fundamental electrical, hydraulics, pumping, construction procedures, and safety measures and control.

Re Carbon Ltd. can certify that the list of parameters to be monitored is complete and consistent with GS Methodology for Emissions Reduction from Safe Drinking Water Supply, version 1.0, and that the monitoring plan adheres to the monitoring methodology used.

The validation team confirms that the monitoring plan can be properly implemented, that all monitoring arrangements are feasible within the project design as per the inspections of the on-site visit, and that the means of implementation of the monitoring plan, including data management and quality assurance and quality control procedures, are sufficient to ensure that the ERs to be achieved by the project activity can be properly reported and verified through document review and interview with the project owner.

4.9. Calculation of Emission Factor and Emission Reductions

The emission reduction calculation estimations have been presented in the PDD as per the applied methodology GS Methodology for Emissions Reduction from Safe Drinking Water Supply, version 1.0.

$f_{NRB,y}$ is the fraction of woody biomass that can be established as non-renewable biomass. It is calculated as follows:

$$f_{NRB,y} = \frac{\text{Non – renewable biomass (NRB)}}{\text{Total woody biomass consumption}}$$

Calculation of $f_{NRB,y}$ is provided by the project owner with a different excel sheet. For total woody biomass consumption, domestic fuelwood consumption value and non-domestic wood consumption are added. UN statistics are used to calculate these domestic fuelwood consumption value (fuelwood consumption) and non-domestic wood consumption (fuelwood consumption) values as 57,778,000 cubic meters. As a result, the total woody biomass consumption is found to be 33,578,853 t/yr with an average wood density of 0.581 t/m³ sourced from FAO. The amount of the renewable biomass is calculated as follows:

$$\begin{aligned} \text{Renewable Biomass (RB)} \\ = \text{MAI} \times (\text{Total forest cover} - \text{Protected area cover} \\ - \text{Forest area with plantation}) \end{aligned}$$

For total forest cover, FAO Global Forest Resources Assessment is referred. For the year 2019, the total forest cover is 3,611,090 ha. For protected area cover and forest area with plantation, again, the same reference is referred. The value for protected area is 1,178,470 ha and the value for the forest area with plantation is 152,790 ha. Also, the other wooded land area too is taken as 32,271,450 ha. The forest cover and other wooded land data has been sourced from FAO Global Forest Resources Assessment 2020 and the same has been correctly used by the PP.

To calculate the mean annual increment with more granular data sourced from Kenya specific study providing data for forests and other wooded land too. The IPCC Table 4.9 Above-Ground Net Biomass Growth in Natural Forests (IPCC) does not provide country specific and value for other wooded land. With the weighted average average of underlying area, the MAI value for forest and other wooded land has arrived at 0.52 t/ha/yr and 0.22 t/ha/yr.

As a result, the renewable biomass is calculated as 8,167,046 t/yr. Therefore, the non-renewable biomass is 25,411,806 t/yr.

Finally, $f_{NRB,y}$ is found as 0.76 as per the above relevant calculation.

The VVB has checked all the underlying sources and value and confirms the same to be interpreted and used correctly in the determination of f_{NRB} value.

The default values have been chosen for the CO₂ emission factor values of fuelwood and charcoal as per IPCC defaults; Volume 2:2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2, Table 2.5. For fuelwood, the emission factor is taken as 112 tCO₂e/TJ for both dry and wet seasons. For charcoal, the emission factor is taken as 165.22 tCO₂e/TJ for both dry and wet seasons. The default values have been chosen for the non-CO₂ emission factor values of fuelwood and charcoal as per IPCC defaults; Volume 2:2006 IPCC Guidelines for National Greenhouse Gas Inventories, Chapter 2, Table 2.5. For fuelwood, the emission factor is taken as 9.46 tCO₂e/TJ for both dry and wet seasons. For charcoal, the emission factor is taken as 44.83 tCO₂e/TJ for both dry and wet seasons. At the end, emission factor for the use of fuel to obtain safe water in the baseline scenario has been calculated for fuelwood and charcoal with using these default values. As a result of calculations:

$$EF_{b, \text{fuelwood}} = 0.000207 \text{ tCO}_2\text{e/L for dry season}$$

$EF_{b, \text{fuelwood}} = 0.000129 \text{ tCO}_2\text{e/L}$ for wet season

$EF_{b, \text{charcoal}} = 0.000224 \text{ tCO}_2\text{e/L}$ for dry season

$EF_{b, \text{charcoal}} = 0.000312 \text{ tCO}_2\text{e/L}$ for wet season

have been found correctly.

Then, Equation 3 in the applied methodology has been applied to calculate the baseline emissions. As a result of calculations:

$BE_{y, \text{fuelwood}} = 3,254 \text{ tCO}_2\text{e/ 6months}$ for dry season

$BE_{y, \text{fuelwood}} = 2,127 \text{ tCO}_2\text{e/ 6months}$ for wet season

$BE_{y, \text{charcoal}} = 3,635 \text{ tCO}_2\text{e/ 6months}$ for dry season

$BE_{y, \text{charcoal}} = 5,299 \text{ tCO}_2\text{e/ 6months}$ for wet season

have been found correctly.

Therefore, the total baseline emission values are as follows:

$BE_{y, \text{fuelwood}} = 5,381 \text{ tCO}_2\text{e/y}$

$BE_{y, \text{charcoal}} = 8,934 \text{ tCO}_2\text{e/y}$

Total baseline emission of the project activity = $5,381 + 8,934 = 14,315 \text{ tCO}_2\text{e/y}$

New low-emission water treatment devices may operate and produce project emissions. Therefore, Equation 8 has been applied to calculate the project emissions. Since no fossil fuels will be used in the project, there will be no emissions related to their usage. Moreover, only the pumping system will be linked to the solar power. The leakage of the project implementation is estimated to be very low and is expected to be zero.

Therefore, the annual estimated emission reduction value is as follows:

$ER_y = BE_y - PE_y - LE_y = 14,315 - 0 - 0 = 14,315 \text{ tCO}_2\text{e}$

The total estimated emission reduction value of the first renewable crediting period is 68,131 tCO₂e.

4.10. Environmental Impacts

The project complies with all applicable legal, ethical, social, and environmental requirements. Chlorine will be used in the project technology to treat water. Impermeable containers will be used to store the chemicals. The necessary health and safety precautions will be taken to reduce environmental exposure. Moreover, a monitoring parameter has been indicated for handling of chlorine (i.e. “transfer of chlorine” monitoring parameter). The amount of chlorine will be recorded and checked by the operating staff. Also, all employees will be trained about handling chlorine.

Further the environmental impacts besides chlorine, as presented in the PDD have been validated by the validation team and found appropriately described.

The project participants have carried out an analysis of the social, economic and environmental impacts following the GS4GG Safeguarding Principles and Requirements. All the safeguarding principles are stated, and all the relevant assessment questions included pertaining to the safeguarding principles.

4.11. Local Stakeholder Comments

In line with the GS requirements, the local stakeholder consultation was held on 24/01/2022 in Member of County Assembly Usenge Hall, Usenge village, Siaya county, Kenya which was validated based on documentary evidence verified by the validation team. On 23/12/2021, a meeting advertisement was published in the neighborhood newspaper to invite all interested local communities. The meeting helped the local stakeholders to understand the project activity and its advantages and disadvantages better. In general, comments from the stakeholders were positive. No significant issues were raised by the participants during the meeting. They were generally worried that the initiative would fail or be interrupted. Another group that has been identified as being adversely impacted by the project may be the water vendors. However, the project already considers providing the vendors to work for the project. Also, requests for the extension of the project to include the whole Yimbo region were received by the project proponents. In accordance with those requests, all project proponents concurred to work together to offer the whole Yimbo region with safe drinking water.

Moreover, on-site interviews with some of the local stakeholders were conducted between 31/08/2022-03/09/2022 (both days included) and there hadn't been any complaint by the interviewed local stakeholders during the interviews held.

4.12. Sampling Plan

The determined project boundary is the frame of the sampling plan. It includes all homes within 1 km of the service points. Samples are randomly chosen from homes within 1 km of the proposed service points for the baseline survey.

For populations greater than 1000 (<50000), the applied methodology specifies a minimum sample size of 100. 145 samples have been chosen which is appropriate for the methodology. The survey was conducted during 27-30/01/2022 in Bondo District, West Yimbo Ward. Interviewees were questioned about their home size, purification process, kind of cookstove, fuel source and so on. Some of the results of the baseline survey are as follows:

- Out of 145 residents, 142 residents were drinking water from unimproved sources (98%). Most of them were using lake water.
- Out of 145 residents, 102 residents have been suffered from water-borne diseases (70.3 %).
- Boiling is the method most frequently used to purify water, accounting for 41% of the total sample group.
- 91% of those surveyed stated they take water directly, with the remaining respondents purchasing it from vendors.
- 82% of the respondents have their own cookstoves. Of the cookstove owners, 70% of them have one stove whereas 29% of them two and 1% of them 3 stoves.
- Fuelwood makes up the majority of the fuel used to boil water during the dry season (62%) whereas charcoal is used mostly during the wet season (59%).

The results of the baseline survey have been found appropriate by the validation team considering the inspections during the on-site visit (between 31/08/2022-03/09/2022).



Figure 11. Meeting with local stakeholders, villagers and local chiefs

4.13. GS4GG Safeguarding Principles and Requirements

The project participants have carried out an analysis of the social, economic and environmental impacts following the GS4GG Safeguarding Principles and Requirements. All the safeguarding principles are stated, and all the relevant assessment questions included pertaining to the safeguarding principles. According to the indicated safeguarding principles, the features of the project activity are as follows:

- Principle 1 (Human Rights): No human rights will be violated in any way with conducting the project activity under the national laws.
- Principle 2 (Gender Equality): The time spent gathering fuelwood and heating water will be saved by the women.
- Principle 3 (Community Health, Safety and Working Conditions): By providing clean water for consumption, the project activity promotes community health. All workers will have a safe place to work on the project.
- Principle 4 (Cultural Heritage, Indigenous Peoples, Displacement and Resettlement): The project does not include or participate in the alteration, destruction, or removal of any significant cultural heritage, nor have an impact on indigenous populations.
- Principle 5 (Corruption): Project participants in the project will not take part in, support, or encourage corruption.
- Principle 6 (Economic Impacts): Through the selling of metered water, the project will be financially viable. Participants in the project shall follow all applicable national labor laws and regulations.
- Principle 7 (Climate and Energy): Solar power will be used and also emission reductions will happen with reducing water boiling.

- Principle 8 (Water): The project will purify lake water which is already consumed directly by the target communities.
- Principle 9 (Environment, ecology and land use): Chlorine will be used in the project technology to treat water. A monitoring parameter has been added in the monitoring plan for this situation (i.e. transfer of chlorine)

It is validated based on interviews held during the on-site visit, document reviews and expertise of the audit team that based on the non-relevance of the assessment questions, no mitigation measures have been adopted, which are deemed appropriate. Employment opportunities have emerged with the coming of the project activity, and the employees are trained in health and safety issues too.

Therefore, through document review and interview held during the site visit, Re Carbon Ltd. confirms that the safeguarding principles assessment will be appropriately conducted for the project activity.

5. LIST OF INDIVIDUALS INTERVIEWED

The list of individuals who were interviewed during the validation period is given in the Table 5-1 below:

Table 5-1: List of individuals interviewed

Reference Number	Means of Interview ¹	Full Name	Title	Organization
I01	SV	Sospeler Obumba	Chairperson	PENWA
I02	SV	Paul Onyanko	Committee Member	PENWA
I03	SV	Mary Ogolla	Secretary	PENWA
I04	SV	Thomas Aehanyo	Member	PENWA
I05	SV	Conslate Ododa	Member	PENWA
I06	SV	Rogers Ochlenli	Committee Member	PENWA
I07	SV	Arice Achandi	Villager	Usigu
I08	SV	Rael Aliutu	Villager	Goi Umala
I09	SV	Jared Onunga	Villager	Lul
I10	SV	Esther A. Origo	Villager	Goi Wambasa
I11	SV	Masdaline A. Huba	Villager	Uwamba
I12	SV	George Aswan	Villager	Ururi Diere
I13	SV	Alice Ojunga	Villager	Majengo
I14	SV	Erick O. Omuok	Villager	Awendo
I15	SV	Washington O. Awuor	Villager	South Jusa
I16	SV	Lawi Oronyo	Villager	Nyangera
I17	SV	Gadd Otieno O.	Villager	Kanyibok
I18	SV	Lazaro Oreine	Villager	Uhanta
I19	SV	Zedekia Onyango	Villager	Misori
I20	SV	John Aito Omenia	Villager	Nyangera
I21	SV	Jocihter Akech	Member	Lucy Oyomo
I22	SV	Walter Okumu	Member	Angwenyo
I23	SV	Naces Oudiji	Water Officer	Boudo
I24	SV	Opunda Gordon Oyoyo	Senior Chief	Yimbo
I25	SV	Rabut Vicklist Opil	Senior Chief	North Yimbo
I26	SV	Osuru Manas Omonji	Senior Chief	Usenge
I27	SV	Paul Olang	Chief	West Yimbo
I28	SV	Adams Omando	Representation	Makohaa

¹ SV: Site visit; T: Telephone; E: E-mail

Reference Number	Means of Interview ¹	Full Name	Title	Organization
I29	SV	Eng. Ouma Jeremia	Member	Jerry Hydro
I30	SV	Victor Odhiambo	Baseline Enumerator	Makoha
I31	SV	Joyce P. Atieno	Baseline Enumerator	Makoha
I32	SV	Agnes Alianda	House Wife	Yimbo
I33	SV	Merciline Anyango	House Wife	Usenge-Yimbo
I34	SV	Millicent Abunge	House Wife	Usenge-Yimbo
I35	SV	Vivian Anyango	House Wife	Usenge-Yimbo
I36	SV	Risper Oyugi	House Wife	Usenge-Yimbo
I37	SV	Rose Akoth	House Wife	Usenge-Yimbo
I38	SV	Susan Atieno	Business Woman	Usenge-Yimbo
I39	SV	Zerah Achieng	House Wife	Usenge-Yimbo
I40	SV	Winnie Adhiambo	House Wife	Usenge-Yimbo
I41	SV	Nerah Audo	House Wife	Usenge-Yimbo
I42	SV	Sharon Auma	Business Woman-Charcoal vendor	Usenge-Yimbo
I43	SV	Millicent Anyango	House Wife	Usenge-Yimbo
I44	SV	Queenter D	Water Vendor	Usenge-Yimbo
I45	SV	Dickson Onyango	House Wife	Usenge-Yimbo
I46	SV	Vivian Akinyi	House Wife	Usenge-Yimbo
I47	SV	Jackline A Okadi	House Wife	Usenge-Yimbo
I48	SV	Nelly Atieno	House Wife	Usenge Town
I49	SV	Hidayah Yusuf	House Wife	Usenge Town
I50	SV	Sharon Atieno	House Wife	Usenge Town
I51	SV	Jael Ogwe Otieno	House Wife	Usenge Town
I52	SV	Christin Atieno	Purified water vendor	Usenge Town
I53	SV	Pamela Anyango	House Wife	Usenge Town
I54	SV	Alice Okendo	House Wife	Usenge -Yimbo
I55	SV	Henry Oswago	House Wife	Usenge -Yimbo
I56	SV	Rose Achieng	House Wife	Usenge -Yimbo
I57	SV	Susan Adhiambo	House Wife	Usenge -Yimbo
I58	SV	Caren Oure	House Wife	Usenge -Yimbo
I59	SV	Sophia Odhiambo	House Wife	Usenge -Yimbo

6. LIST OF DOCUMENTS REVIEWED

The list of the documents which were reviewed during the validation period is given in Table 6-1 below:

Table 6-1: List of documents reviewed

Document Number	Document Name	Version	Date (dd/mm/yyyy)
D01	PDD	2.0	02/08/2022
D02	PDD	3.0	02/10/2022
D03	PDD	3.1	11/11/2022
D04	PDD	3.2	12/12/2022
D05	Baseline Survey Data Excel Sheet	1	02/08/2022
D06	Baseline Survey Data Excel Sheet	2	02/10/2022
D07	ER Calculation Excel Sheet	2.0	02/08/2022
D08	ER Calculation Excel Sheet	3.0	02/10/2022
D09	ER Calculation Excel Sheet	3.1	11/11/2022
D10	ER Calculation Excel Sheet	3.2	12/12/2022
D11	KMZ File of the Project Activity	-	-
D12	GS Preliminary Review	-	13/07/2022
D13	Stakeholder Consultation Report	2.0	02/08/2022
D14	Yimbo East Ward Data Collection Report	-	-
D15	Usigu Water Supply Metering System Information Sheet	-	-
D16	Usigu Water Supply Project Work Plan	-	-
D17	Registration Letter of the Project Activity at GS Registry	-	27/09/2022
D18	Memorandum of Understanding (between Offgrid Sun S.R.L. and PENWA)	-	22/02/2022
D19	ODA Declaration	-	07/04/2022
D20	Usigu Water System Technical Assessment Report for Offgrid Sun	-	-
D21	Minutes of Piengima Women Association (PENWA)	-	21/09/2021
D22	Evidence Document for the Expected Operational Lifetime of the Project Activity (prepared by Jerri-Hydro Experts)	-	27/09/2022
D23	Evidence of Non-operational Technology (prepared by PENWA)	-	22/09/2022
D24	SDG Impact Tool	-	-

Document Number	Document Name	Version	Date (dd/mm/yyyy)
D25	Equipment Brochures	-	-
D26	Site Photos	-	-
D27	CDM Validation and Verification Standard for Project Activities	3.0	09/09/2021
D28	CDM Project Standard for Project Activities	3.0	09/09/2021
D29	GS Methodology for Emissions Reduction from Safe Drinking Water Supply	1.0	03/05/2021
D30	GHG Emissions Reduction & Sequestration Product Requirements	2.1	24/02/2022
D31	Community Services Activity Requirements	1.2	23/10/2019
D32	Tool 32: Positive Lists of Technologies	4.0	11/03/2022
D33	PDD	3.3	10/01/2023
D34	ER Calculation Excel Sheet	3.3	10/01/2023
D35	Expert Stakeholder Assessment of the Project Activity	-	14/08/2022
D36	Usigu Water Supply Infrastructure Renovation and Upgrade Progress Report (prepared by Jerri-Hydro Experts)	-	04/04/2023
D37	Memorandum of Understanding (between Offgrid Sun S.R.L., Jerri-Hydro Experts, MAKOHAA, Genius Watter S.R.L. and PENWA)	-	17/10/2022
D38	Requisition for Assistance (from PENWA to Offgrid Sun about water system maintenance issues)	-	25/02/2022
D39	Acceptance to Offer our Assistance to Usigu Water Supply System (from Offgrid Sun to PENWA)	-	29/04/2022
D40	Stakeholder Consultation Report	2.1	02/04/2023
D41	Signed Declaration about Double Counting from the Project Owner	-	04/04/2023
D42	Consultancy Agreement (between Offgrid Sun S.R.L. and Mr. Jeremiah Ouma)	-	30/03/2022
D43	CV of the Consultant (Mr. Jeremiah Ouma)	-	-
D44	Baseline Survey Data Excel Sheet	3	03/04/2023
D45	PDD	3.4	27/03/2023
D46	ER Calculation Excel Sheet	3.4	03/04/2023
D47	SDG Impact Tool (Final)	-	03/04/2023
D48	MoU (between Offgrid Sun S.R.L and The County Government of Siaya)	-	21/12/2022

Document Number	Document Name	Version	Date (dd/mm/yyyy)
D49	Evidence Document for the Project Lifetime (prepared by Jerri-Hydro Experts)	-	05/04/2023
D50	Solstice data on population coverage	-	-
D51	Household Size Survey		12/2021
D52	PDD	3.5	05/05/2023
D53	ER Calculation Excel Sheet	3.5	05/05/2023
D54	fNBR_Kenya_23052023	-	23/05/2023

7. VALIDATION TEAM AND ITR COMPETENCE

Mr. Rohit BADAYA holds a Master's degree in "Nanotechnology" and a Bachelor's degree in "Pulp and Paper Engineering" from the Indian Institute of Technology Roorkee (IIT Roorkee). He is also an Energy Auditor, certified by the Bureau of Energy Efficiency, Ministry of Power, Govt. of India. Rohit has more than 13 years of work experience in the area of Climate Change (CDM, GS, VCS) and has worked for various DOEs/VVBs in the past, including "TÜV Nord", "PJRCES Inc." and "KBS Certification Services Private Limited", where he worked as a Team Leader, Validator/Verifier, Technical Expert, ITR, Manager (Technical & Certification) and Quality Manager. Within the context of CDM/GS/VCS, Rohit is a Technical Expert for Technical Areas TA 1.1 (Thermal energy generation from fossil fuels and biomass including thermal electricity from solar), TA 1.2 (Energy generation from renewable energy sources), TA 2.1 (Energy Distribution), TA 3.1 (Energy Demand), TA 13.1 (Waste Handling and Disposal) and TA 13.2 (Manure). Rohit has a record of accomplishment of more than 200 projects as Team Leader, Validator, Verifier, Technical Expert and Technical Reviewer. He is well versed with various local regulations related to CDM/GS/VCS projects, located in countries in Africa, Asia as well as in Turkey. With re-carbon, Rohit is a free-lance Team Leader and ITR.

Ms. Selen CİLASUN holds a B.Sc. and a M.Sc. Degree in "Bioengineering". With re-carbon, Selen is an internal Validator/Verifier Trainee.

Mr. Victor GATHOGO holds a B.Sc. in "Environmental Science" with Egerton University and currently undergoes a M.Sc. in "Renewable Energy Technology" program at Kenyatta University/Nairobi. With re-carbon, Victor is a free-lance Regional Expert for East Africa and Senegal.

Mr. Sandeep KANDA holds a B.Sc. degree in "Mechanical Engineering", a M.Sc. degree in "Energy Systems Engineering" from the Indian Institute of Technology/Bombay and a Post Graduate Diploma in "Industrial Safety & Environmental Management" from the National Institute of Industrial Engineering in India. He has more than ten years of work experience with auditing and consultancy firms, seven years thereof with Designated Operational Entities under the CDM. He is experienced in working on diversified areas of energy and environmental management, including policies, Clean Development Mechanism (CDM), Corporate Sustainability Reporting (CSR) Audits, energy audits, utility audits and product development. Sandeep has audited more than 30 CDM projects as an ITR, 40 projects as a Team Leader and 7 PoAs in various capacities, covering a broad range of sectoral scopes, such as Energy industries (renewable-/non-renewable), Energy distribution, Energy demand, Manufacturing industries, Chemical industries, Transport, Metal production, Waste handling & disposal and Agriculture. With re-carbon, Sandeep is a free-lance Team Leader and ITR

Ms. Öykü YAKUPOĞLU holds a B.Sc. degree in "Environmental Engineering" from Middle East Technical University/Ankara and currently undergoes a M.Sc. program in "Chemistry". She is experienced in ISO 14001: 2015 - Environment Management System, ISO 50001: 2018- Energy

Management System, ISO 45001: 2018 - Occupational Health and Safety, Management System, ISO 9001: 2015 - Quality Management System Internal Auditor, ISO 14001: 2015 - Environment Management System Internal Auditor and an ISO 50001: 2018-Energy Management System Internal Auditor. With re-carbon, Öykü is an internal Validator/Verifier and Team Leader Trainee.

7.1. Appointment Certificates

CERTIFICATE OF APPOINTMENT



Within the scope and in strict accordance to the appointments indicated below, the bearer may:

- Participate in assessments conducted by re-carbon Ltd.
- Take the appointed positions within and outside of an assessment team
- Bring specific expertise to assessments

This Certificate of Appointment is valid unless there are changes in the related requirements for the qualification and appointment and/or the personnel's work agreement is terminated. There is no defined validity period for this Certificate. However, The Certificate may be updated, suspended or cancelled at any time, as a result of performance assessments and/or other reasons as defined above.

This Appointment Certificate is granted on the date of **01.08.2022** by:



Christian Johannes
(General Manager)

This Certificate of Appointment is given to

Mr. Rohit Badaya

as a confirmation of compliance with re-carbon's internal qualification requirements for the following positions:



Gold Standard
Climate Security & Sustainable Development



SECTORIAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS 01: Energy industries	TA 1.1: Thermal energy generation	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021
	TA 1.2: Renewables	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021
SS 02: Energy distribution	TA 2.1: Energy distribution	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021
SS 03: Energy demand	TA 3.1: Energy demand	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021
SS 12: Waste handling and disposal	TA 12.1: Solid waste and wastewater	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021
	TA 12.2: Manure	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021	26.10.2021
SS 15: Agriculture	TA 15.1: Agriculture															



ICR International Carbon Registry

BioCarbon Registry

SECTORIAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS 01: Energy industries	TA 1.1: Thermal energy generation	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022										
	TA 1.2: Renewables	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022										
SS 02: Energy distribution	TA 2.1: Energy distribution	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022										
SS 03: Energy demand	TA 3.1: Energy demand	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022										
SS 12: Waste handling and disposal	TA 12.1: Solid waste and wastewater	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022										
	TA 12.2: Manure	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022										
SS 15: Agriculture	TA 15.1: Agriculture															

COUNTRY EXPERTISE:

India and Turkey

CERTIFICATE OF APPOINTMENT



Within the scope and in strict accordance to the appointments indicated below, the bearer may:

- Participate in assessments conducted by re-carbon Ltd.
- Take the appointed positions within and outside of an assessment team
- Bring specific expertise to assessments

This Certificate of Appointment is valid unless there are changes in the related requirements for the qualification and appointment and/or the person's work agreement is terminated. There is no defined validity period for this Certificate. However, The Certificate may be updated, suspended or cancelled at any time, as a result of performance assessments and/or other reasons as defined above.

This Appointment Certificate is granted on the date of **12.08.2022** by:



Christian Johannes
(General Manager)

This Certificate of Appointment is given to

Mr. Victor Gathogo (Regional Expert EA)

as a confirmation of compliance with re-carbon's internal qualification requirements for the following positions:



Gold Standard
Climate Security & Sustainable Development



REGIONAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS 01: Energy industries	TA 1.1: Thermal energy generation															
	TA 1.2: Bio-waste															
SS 02: Energy distribution	TA 2.0: Energy distribution															
SS 03: Energy demand	TA 3.0: Energy demand															
SS 12: Waste handling and disposal	TA 12.1: Solid waste and wastewater															
	TA 12.2: Manure															
SS 15: Agriculture	TA 15.1: Agriculture															



ICR International
Carbon
Registry

BioCarbon
Registry

REGIONAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS 01: Energy industries	TA 1.1: Thermal energy generation															
	TA 1.2: Bio-waste															
SS 02: Energy distribution	TA 2.0: Energy distribution															
SS 03: Energy demand	TA 3.0: Energy demand															
SS 12: Waste handling and disposal	TA 12.1: Solid waste and wastewater															
	TA 12.2: Manure															
SS 15: Agriculture	TA 15.1: Agriculture															

COUNTRY EXPERTISE:

Kenya, Rwanda, Tanzania, Uganda, Senegal for all schemes listed above in this certificate

CERTIFICATE OF APPOINTMENT



Within the scope and in strict accordance to the appointments indicated below, the bearer may:

- Participate in assessments conducted by re-carbon Ltd.
- Take the appointed positions within and outside of an assessment team
- Bring specific expertise to assessments

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This Appointment Certificate is granted on the date of **01.08.2022** by:



Christian Johannes
(General Manager)

This Certificate of Appointment is given to

Mr. Sandeep Kanda

as a confirmation of compliance with re-carbon's internal qualification requirements for the following positions:



REGIONAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS-01: Energy Industries	TA-1.1: Thermal energy generation	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022
	TA-1.2: Bio-waste	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022
SS-02: Energy distribution	TA-2.1: Energy distribution	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022
SS-03: Energy demand	TA-3.1: Energy demand	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022
SS-12: Waste handling and disposal	TA-12.1: Solid waste and wastewater	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022
	TA-12.2: Manure	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022
SS-15: Agriculture	TA-15.1: Agriculture	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022



REGIONAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS-01: Energy Industries	TA-1.1: Thermal energy generation	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022										
	TA-1.2: Bio-waste	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022										
SS-02: Energy distribution	TA-2.1: Energy distribution	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022										
SS-03: Energy demand	TA-3.1: Energy demand	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022										
SS-12: Waste handling and disposal	TA-12.1: Solid waste and wastewater	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022										
	TA-12.2: Manure	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022										
SS-15: Agriculture	TA-15.1: Agriculture	01.01.2022	01.01.2022	01.01.2022	01.01.2022	01.01.2022										

COUNTRY EXPERTISE:

China, India, Indonesia, Mexico, Nepal, Philippines, Tanzania, Thailand, Türkiye, Vietnam

CERTIFICATE OF APPOINTMENT



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- Bring specific expertise to assessments

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This Appointment Certificate is granted on the date of **01.08.2022** by:



Christian Johannes
(General Manager)

This Certificate of Appointment is given to

Ms. Öykü Yakupoğlu

as a confirmation of compliance with re-carbon's internal qualification requirements for the following positions:



REGIONAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS 01: Energy Industries	TA 1.1: Thermal energy generation					
	TA 1.2: Bio-waste					
SS 02: Energy distribution	TA 2.1: Energy distribution					
SS 03: Energy demand	TA 3.1: Energy demand					
SS 12: Waste handling and disposal	TA 12.1: Solid waste and wastewater					
	TA 12.2: Manure					
SS 15: Agriculture	TA 15.1: Agriculture					



REGIONAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS 01: Energy Industries	TA 1.1: Thermal energy generation					
	TA 1.2: Bio-waste					
SS 02: Energy distribution	TA 2.1: Energy distribution					
SS 03: Energy demand	TA 3.1: Energy demand					
SS 12: Waste handling and disposal	TA 12.1: Solid waste and wastewater					
	TA 12.2: Manure					
SS 15: Agriculture	TA 15.1: Agriculture					

COUNTRY EXPERTISE:

Turkey

8. VALIDATION OPINION

Re Carbon Ltd. performed the validation of the “Maji Safi, Maisha Bora Project” in “Kenya” between 30/08/2022 and 26/12/2022. The validation was performed on the basis of UNFCCC criteria for the CDM, Gold Standard for Global Goals (GS4GG) and Host Party criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The validation was performed by a validation team consisting of “Sandeep Kanda as the team leader, Öykü Yakupoğlu as the trainee validator, Selen Cilasun as the trainee validator, Victor Gathogo as the regional expert and Rohit Badaya as the ITR” and the project activity was checked against the applicable rules and regulations of CDM including CDM Validation and Verification Standard for project activities version 3.0, CDM Project Standard for project activities version 3.0, GS4GG version 1.2.

Re Carbon Ltd. hereby confirm that the proposed project activity “Maji Safi, Maisha Bora Project” in Kenya, applied all relevant EB-guidance as the selected baseline and monitoring methodologies and the associated methodological tools have been applied correctly. The total emission reductions from the project are estimated to be on the average of 14,315 tCO₂e per annum over the selected 5 year crediting period. The emission reduction forecast was checked and it is deemed likely that the stated amount will be achieved, given that the underlying assumptions do not change.

As a result, the validation team assigned by Re Carbon Ltd. concludes that the proposed Project Activity “Maji Safi, Maisha Bora Project” in Kenya, as described in the PDD version 3.5 dated 05/05/2023.

- meets all relevant Host Country criteria;
- meets all relevant requirements of the GS4GG, UNFCCC for CDM project activities [including Article 12 of the Kyoto Protocol, the Modalities and Procedures for CDM (Marrakesh Accords) and the subsequent decisions and guidance by the COP/MOP and the CDM Executive Board];
- applies correctly the baseline and monitoring methodology GS Methodology for Emissions Reduction from Safe Drinking Water Supply, version 1.0.;
- its additionality is sufficiently justified in the PDD;
- is likely to achieve estimated emission reductions;

Therefore, Re Carbon Ltd. requests the registration of the proposed project activity as a GS project activity.



Sandeep KANDA
Team Leader
26/05/2023



Rohit BADAYA
ITR
26/05/2023



Esin TUNALI
Certification Manager
26/05/2023

ANNEX 1: VALIDATION PROTOCOL

Table 1 –GS-PDD-FORM, GS4GG and CDM Validation Requirements

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
Cover Page-Key Project Information					
1. Has the following information been indicated in the cover page of the PDD?	GS-PDD-FORM Ver. 1.2	DR	Please delete the instruction part on the cover page.	CAR-1	OK
1.1. GS ID of the project activity	GS-PDD-FORM Ver. 1.2	DR	This is available as “11544”.	OK	OK
1.2. Title of the project activity	GS-PDD-FORM Ver. 1.2	DR	This is available as “Maji Safi, Maisha Bora Project”.	OK	OK
1.3. Time of first submission date	GS-PDD-FORM Ver. 1.2	DR	This is available as “07/04/2022”.	OK	OK
1.4. Date of design certification	GS-PDD-FORM Ver. 1.2	DR	N/A (This is the validation process of the project activity.)	OK	OK
1.5. Version number of the PDD	GS-PDD-FORM Ver. 1.2	DR	This is available as “V2.0” for the first submission.	OK	OK
1.6. Completion date of version	GS-PDD-FORM Ver. 1.2	DR	This is available as “02/08/2022” for the first submission.	OK	OK
1.7. Project developer	GS-PDD-FORM Ver. 1.2	DR	Please indicate the full name of the project developer on the cover page and in Appendix 2 (i.e. Offgridsun S.R.L.).	CAR-2	OK
1.8. Project representative	GS-PDD-FORM Ver. 1.2	DR	This is available as “Ceres-Enve”.	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
1.9. Project Participants and any communities involved	GS-PDD-FORM Ver. 1.2	DR	Please clarify the status of "Jerry Hydro Expert (JHE)" company.	CL-1	OK
1.10. Host country (ies)	GS-PDD-FORM Ver. 1.2	DR	This is available as "Kenya".	OK	OK
1.11. Activity requirements applied	GS-PDD-FORM Ver. 1.2	DR	This is available as "Community Services Activities".	OK	OK
1.12. Scale of the project activity	GS-PDD-FORM Ver. 1.2	DR	This is available as "Small Scale".	OK	OK
1.13. Other requirements applied	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
1.14. Methodology (ies) applied and version number	GS-PDD-FORM Ver. 1.2	DR	This is available as "GS Methodology for Emissions Reduction from Safe Drinking Water Supply (v 1.0)".	OK	OK
1.15. Product requirements applied	GS-PDD-FORM Ver. 1.2	DR	This is available as "GHG Emissions Reduction & Sequestration".	OK	OK
1.16. Project cycle	GS-PDD-FORM Ver. 1.2	DR	This is available as "Regular".	OK	OK
2. Has the estimated sustainable development contributions of the project activity been provided in the relevant tabular format?	GS-PDD-FORM Ver. 1.2	DR	a) In ER Calculation Excel sheet, the emission reduction value is indicated as "19,246 tCO ₂ e". However, in Table 1 in the PDD, this value stated as "19,24619,246 tCO ₂ e". Please correct the contradiction. b) Please provide SDG contributions in the ER Calculation Excel sheet for each parameter indicated in Table 1 in the PDD.	CAR-3	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
A. Description of Project					
A.1. Purpose and general description of project					
1. Is the scenario existing prior to the implementation of the project activity including, where applicable, the type of facility where the project activity will take place or replace, described in the PDD?	GS-PDD-FORM Ver. 1.2	DR	<p>a) Please indicate the references where necessary in Section A.1 (e.g. WASREB Impact Report). Also, please clarify and correct the statement ‘...drinking water quality by waters service providers is rated as unacceptable (<90%) with an average...’.</p> <p>b) In the first paragraph in Section A.1, it is indicated that the one of the project participant is “Makohaa (CBO)”. However, in the second paragraph in Section A.1, the other project participant is indicated as “PENWA CBO”. Please clarify this contradiction.</p> <p>c) Please indicate the estimated start date of the project activity in Section A.1 of the PDD.</p>	CAR-4	OK
2. Is the baseline scenario described as identified in section B4 of the PDD? (If baseline scenario is the same with the scenario existing prior to the start of the project activity, then no need to repeat the description, but it shall be stated in the PDD that both scenarios are the same.)	GS-PDD-FORM Ver. 1.2	DR	Please provide a brief description of the baseline scenario in Section A.1.	CAR-5	OK
3. Has the PDs provided an estimation of annual average and total GHG emission reductions for the chosen crediting period?	GS-PDD-FORM Ver. 1.2	DR	Please indicate the estimated annual average and total GHG emission reductions for the chosen crediting period in Section A.1.	CAR-6	OK
4. Is purpose of the project activity described including how it contributes to the sustainable development of the Host Party?	GS-PDD-FORM Ver. 1.2	DR	The purpose of the project activity is indicated clearly.	OK	OK
A.1.1. Eligibility of the project under Gold					

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
Standard					
A.1.1.1. Is it described how the project meets the eligibility criteria as per section 3.1.1 of GS4GG Principles & Requirements and the relevant activity requirements?	GS-PDD-FORM Ver. 1.2 GS4GG Principles & Requirements	DR	<p>a) Please indicate the version of “Gold Standard approved Community Services Activity Requirements” in Section A.1.1.</p> <p>b) Please indicate the version of “GHG Emission Reductions and Sequestration Product Requirements” in Section A.1.1.</p> <p>c) Please provide the signed and sealed letter on company letterhead that the project hasn’t been registered, or hasn’t been seeking registration under any other GHG programs.</p> <p>d) Please provide the signed memorandum which is indicated in Section A.1.1.</p> <p>e) Please provide the ODA declaration which is indicated in Section A.1.1.</p> <p>f) Please delete the unused bullets in Section A.1.1 (on page 13).</p>	CAR-7	OK
A.1.2. Legal ownership of products generated by the project and legal rights to alter use of resources required to service the project					
A.1.2.1. Is it justified that the project owner has full and uncontested legal ownership of the products that are generated under Gold Standard Certification and has legal rights concerning changes in use of resources required to service the Project for e.g water rights, where applicable?	GS-PDD-FORM Ver. 1.2	DR	Please provide the Carbon Rights Transfer agreement.	CL-2	OK
A.2. Location of the project activity					

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
A.2.1. Is the location of the project activity clearly identified including:	GS-PDD-FORM Ver. 1.2	DR	a) Please indicate more detailed information for the location of the project activity (e.g. region, province, map and so on). b) The KMZ document of the project activity was provided but please indicate the project coordinates in Section A.2 of the PDD.	CAR-8	OK
A.2.1.1. Host Party(ies)?	GS-PDD-FORM Ver. 1.2	DR	This is available as "Republic of Kenya".	OK	OK
A.2.1.2. Region/State/Province etc.	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-8.	CAR-8	OK
A.2.1.3. City/Town/Community etc.	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-8.	CAR-8	OK
A.2.1.4. Street name and number	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-8.	CAR-8	OK
A.2.1.5. A map	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-8.	CAR-8	OK
A.2.1.6. Details of physical location, including information allowing the unique identification of the project activity (e.g. geographic coordinates).	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-8.	CAR-8	OK
A.3. Technologies and/or measures					
A.3.1. Does PDD include the accurate and complete description of the proposed	CDM Project Standard for	DR, SV	a) Please provide the evidence document of the date for the new management activity stated in Section A.3.	CAR-9	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
project activity and provide an understanding of the proposed GS project activity?	Project activities §35		<p>b) Please remove the yellow highlights throughout the PDD.</p> <p>c) Please provide the photographic evidences of Usigu Twin Slow Sand Filter and Automatic Chlorine Chemical Dispenser (the real ones).</p> <p>d) Please indicate the information about vending points (e.g. number of them, smart meters and so on) in Section A.3.</p> <p>e) Please indicate information about the expected capacities of the tanks which will be used.</p>		
A.3.2. Is the proposed GS project activity in existing facilities or utilizing existing equipment?	CDM Validation and Verification Standard for Project activities §51	DR	The proposed project activity will rehabilitate and improve the existing water supply system.	OK	OK
A.3.3. Does the proposed GS project activity involve the alteration of an existing installation or process?	CDM Validation and Verification Standard for Project activities §51	DR	The proposed project activity will rehabilitate and improve the existing water supply system.	OK	OK
A.3.4. If the proposed GS project activity is the alteration of an existing installation or process, does the project description clearly state the differences resulting from the project activity compared to the pre-project situation?	CDM Validation and Verification Standard for	DR	As the proposed GS project activity involves alteration of an existing installation the project description shall clearly state the differences resulting from the project activity compared to the pre-project situation. Also, the clear depiction of existing facilities and interventions there upon	CAR-10	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Project activities §51		along with specifications and timeframes are to be provided clearly.		
A.3.5. Have the technologies and measures to be employed and/or implemented by the project activity been described including a list of facilities, systems and equipment that will be installed and/or modified by the project activity?	GS-PDD-FORM Ver. 1.2	DR	The systems and equipment that will be installed are not indicated clearly. The technologies and measures to be employed and/or implemented by the project activity are to be described including a list of facilities, systems and equipment that will be installed and/or modified by the project activity.	CAR-11	OK
A.3.6. Has the PD provided a list of facilities, systems and equipment in operation under the existing scenario prior to the implementation of the project activity?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-11.	CAR-11	OK
A.3.7. Has the PD provided a list of facilities, systems and equipment in the baseline scenario, as established in section B.4 of the PDD?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-11.	CAR-11	OK
A.3.8. Does the description clearly explain how the same types and levels of services provided by the project activity would have been provided in the baseline scenario?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §60	DR	Please see CAR-11.	CAR-11	OK
A.3.9. Has the PDs included information about the age and average lifetime of the equipment based on manufacturer's specifications and industry standards, and existing and forecast installed capacities, load factors and efficiencies, under section A.3 of the	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project	DR	Please indicate the age and average lifetime of the equipment based on manufacturer's specifications and industry standards in Section A.3.	CAR-12	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
PDD?	activities §36e-iv				
A.3.10. Is the information provided as to how the project contributes positively to three SDGs?	GS-PDD-FORM Ver. 1.2	DR	This is indicated in Section B.6.	OK	OK
A.3.11. Has the energy and mass flows and balances of the systems and equipment included in the project activity, been given?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
A.3.12. Has the types and levels of services (normally in terms of mass or energy flows) provided by the systems and equipment that are being modified and/or installed under the project activity and their relation, if any, to other manufacturing/production equipment and systems outside the project boundary, been given?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
A.3.13. Has the PDs described the technology to be employed by the project activity to enable the identification of the following:	CDM Project Standard for Project activities §36	DR	Please indicate the Project's title and sectoral scope in Section A.3 as well.	CAR-13	OK
A.3.13.1. Project's title	CDM Project Standard for Project activities §36a	DR	Please see CAR-13.	CAR-13	OK
A.3.13.2. Project's sectoral scope	CDM Project Standard for	DR	Please see CAR-13.	CAR-13	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Project activities §36b				
A.3.13.3. Know-how to be used are transferred to the host Party(ies)	CDM Project Standard for Project activities §36h	DR	This is available.	OK	OK
A.4. Scale of the project					
A.4.1. Has the scale of the project defined (micro scale, small scale or others)?	GS-PDD-FORM Ver. 1.2	DR	This is available as “small scale”.	OK	OK
A.4.2. Is the justification for the scale of the project provided referring to relevant activity requirement?	GS-PDD-FORM Ver. 1.2	DR	The justification is available.	OK	OK
A.5. Funding source of project					
A.5.1. Is the source of public and private funding sources for the project provided?	GS-PDD-FORM Ver. 1.2	DR	The funding for the water treatment and distribution system will be provided by Offgridsun that will be legal owner of the VERs.	OK	OK
A.5.2. If the project activity receives public funding, has the PD provided information on Parties providing the public funding?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
A.5.3. If the project activity receives public funding, has the PD attached in Appendix 2 of the PDD an affirmation obtained from	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK

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Parties included in Appendix 1 that such funding does not result in a diversion of Official Development Assistance (ODA), is separate from, and is not counted towards the financial obligations of those Parties?	CDM Project Standard for Project activities §38				
B. Application of Approved Gold Standard Methodology (ies) and/or Demonstration of SDG Contributions					
B.1. Reference of approved methodology(ies)					
B.1.1. Are the references including the reference number, title, and the version of the selected methodology(ies) given in the PDD?	GS-PDD-FORM Ver. 1.2	DR	a) Please indicate the references for the applied methodology and requirements. b) Please indicate the version numbers of the applied requirements.	CAR-14	OK
B.1.2. Are the references including the reference number, title, and the version of any tools and other methodologies to which the selected methodology(ies) refer to given in the PDD?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §55	DR	Please see CAR-14.	CAR-14	OK
B.2. Applicability of methodology(ies)					
B.2.1. Has the PDs justified the choice of the selected methodology(ies), if applicable, by showing that the project activity meets each applicability condition of the methodology(ies)?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities	DR	The justifications are available.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	§55 CDM Validation and Verification Standard for Project activities §67				
B.2.2. Does the project activity meet each of the applicability conditions of the tools or other methodology components referred to in the applied methodology?	CDM Validation and Verification Standard for Project activities §67	DR	The project activity meets each of the applicability conditions.	OK	OK
B.2.3. Has the PDs explained the documentation that has been used and provided the references to applicability of methodology?	GS-PDD- FORM Ver. 1.2	DR	a) Please provide the version number and the reference of the applied methodology in Section B.2. b) Please give the necessary references in Section B.2 (e.g. WHO/UNICEF Joint Monitoring Programme Core).	CAR-15	OK
The Gold Standard Methodology for Emission Reductions from Safe Drinking Water Supply (SDWS)					
B.2.4. Does the project activity introduce a new, or rehabilitate an existing, zero-emission or low-emission technology to supply safe drinking water?	SDWS Version 1.0 §2.1.1	DR	This is available in Section B.2: "The proposed project activity will rehabilitate the existing technology."	OK	OK
B.2.5. Eligible household water treatment technologies (HWT), institutional water	SDWS Version 1.0	DR	This is available in Section B.2: "The project aims to implement Community level water treatment technology	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
treatment technologies (IWT), and community level water treatment technologies (CWT) include bleach/chlorine, water filter (ceramic, sand, composite, membrane, etc.), UV disinfection, etc.	§2.2.1a		(CWT)."		
B.2.6. Eligible community water supply technologies (CWS) include new installation of new borehole hand-pumps, borehole hand-pumps rehabilitation, solar powered drinking water pumps, etc. Water pumps powered by fossil-fuel engines are not eligible, with the exception of backup fossil-fuel engines that are used for no more than 10% of operating hours (parameter SWDS 33).	SDWS Version 1.0 §2.2.1b	DR	This is available in Section B.2: "Zero emission solar powered water treatment system will be used."	OK	OK
B.2.7. All projects involving CWT and CWS technologies must also include ongoing maintenance and repair of the project technology	SDWS Version 1.0 §2.2.1c	DR	It is indicated that: "...a water maintenance team will be set up for each point of service covering whole Yimbo region." Please provide evidence to confirm the same.	CL-3	OK
B.2.8. Where the project involves the rehabilitation of an existing technology, the project developer shall provide evidence that the existing technology is non-operational and that there is no planned maintenance or repair for at least 3 months after the date it became non-operational (parameter SWDS 2).	SDWS Version 1.0 §2.2.1d	DR	It is indicated that, "The project owner may opt to repair the existing pipeline system to supply water the kiosk." Please clarify and correct the same. Also, provide evidence to confirm that the existing technology is non-operational and that there is no planned maintenance or repair for at least 3 months after the date it became non-operational.	CAR-16	OK
B.2.9. This methodology allows for project activities to include safe water treatment and/or supply technologies implemented for end-users in households, and/or commercial premises such as shops or	SDWS Version 1.0 §2.2.1e	DR	This is available in Section B.2: "Safe water will be supplied to end- users in households both by smart water kiosks and by domestic/private connections."	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
institutional premises including half or full day/boarding schools, prisons, army camps & refugee camps.					
B.2.10. In cases where the safe water is retrieved at the CWT or CWS location, the water in its improved form shall be available within a distance of 1 km or less from the end-users, as demonstrated by satellite imaging or GPS coordinates of each CWT or CWS location. Alternatively, as a proxy, a total collection time of 30 minutes or less for a round trip, including queuing, using the travel modes of walking or 59roject5959 may be demonstrated (parameter SDWS 1).	SDWS Version 1.0 §2.2.1f	DR	It is indicated that: “The water kiosk will be located within the 1 km walking/59roject5959 distance from the of the end-users in households.”. Please demonstrate by satellite imaging or GPS coordinates of each CWT or CWS location. Alternatively, as a proxy, a total collection time of 30 minutes or less for a round trip, including queuing, using the travel modes of walking or 59roject5959 may be demonstrated.	CAR-17	OK
B.2.11. Project technology performance level (HWT and IWT): It shall be demonstrated based on report of laboratory testing or official notification that the project technology or equipment achieves either (I) the performance target classification 3-star or 2-star level, meaning “Comprehensive Protection,” as per the WHO International Scheme to Evaluate Household Water Treatment Technologies (World Health Organization, 2011) or (ii) compliance with the national standard or guideline for household drinking water treatment technology; if no national guideline or standard is available, then the project technology shall comply with the WHO International Scheme requirements as per (I) (parameter SDWS 2).	SDWS Version 1.0 §2.2.1g	DR	This is available in Section B.2: “The project is not HWT or IWT.”	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.2.12. Project technology performance level (CWT and CWS): For each individual CWT or CWS, it shall be demonstrated at the start of each crediting period with water quality testing reports that the water directly supplied by the project water technology/source achieves both: ii. compliance with (i) national standards or guidelines on priority chemical contamination and physical and aesthetic aspects, or in the absence of such requirements, (ii) international standards or guidelines on priority chemical contamination and physical and aesthetic aspects. (parameter SWDS 3)	SDWS Version 1.0 §2.2.1h	DR	It is indicated that: “Water quality test will be performed in accordance with the national standard for drinking water in Kenya.” Please clarify with reference to the exact standard.	CAR-18	OK
B.2.13. The project must conduct annual water hygiene education campaigns for the end-users. (parameter SDWS 20).	SDWS Version 1.0 §2.2.1i	DR	It is indicated that: “The project staff will conduct annual water hygiene education campaigns for the end-users.” Please include in the annex of the PDD, sample WHO/UNICEF Joint Monitoring Programme Core questions for drinking water and hygiene.	CAR-19	OK
B.2.14. A project applying this methodology may make SDG claims if relevant monitoring parameter(s) is included in the monitoring plan to demonstrate and confirm the project’s contributions to SDGs. See parameter SDWS 19	SDWS Version 1.0 §2.2.1j	DR	This is available in Section B.2: “The project aims to achieve basic level services by providing households an improved source with water collection times of no more than 30 minutes per round trip.”	OK	OK
B.2.15. Project shall document the national, regional and local regulatory framework for provision of safe drinking water in the project boundary (parameter SDWS 4). The project shall not undermine or conflict with any national, sub-national and local regulations or guidance for safe drinking water supply, operation and maintenance,	SDWS Version 1.0 §2.3.1	DR	PDD shall include all the safeguards criteria too including among others documenting the national, regional and local regulatory framework for provision of safe drinking water in the project boundary (parameter SDWS 4). Provide evidence to confirm that the project shall not undermine or conflict with any national, sub-national and local regulations or guidance for safe drinking water supply, operation and maintenance, including any tariff	CAR-20	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
including any tariff requirements.			requirements.		
B.2.16. If the expected technical life of project technology (parameter SDWS 7) is shorter than the crediting period, describe measures to ensure that end users are provided replacement systems of comparable quality at the end of the expected technical life (for example, replace with comparable or better technology, retrofit with performance guarantee, etc.). This applies both for new technology and rehabilitated.	SDWS Version 1.0 §2.3.2	DR	Please see CAR-20.	CAR-20	OK
B.2.17. All CWT and CWS projects must include ongoing maintenance and repair of the project technology. The PDD must describe the maintenance and repair plan, including the system for logging/documenting of technology operation and maintenance events including periods of downtime. The log of operation and maintenance shall be required during the monitoring period to demonstrate project technology operation	SDWS Version 1.0 §2.3.3	DR	Please indicate the maintenance and repair plan for the project activity in Section B.2.	CAR-21	OK
B.3. Project boundary					
B.3.1. Has the PD described the emission sources and GHGs included in the project boundary for the purpose of calculating project emissions and baseline emissions, in the tabular format?	GS-PDD-FORM Ver. 1.2	DR	The table is available in Section B.3.	OK	OK
B.3.2. Has the PD presented a flow diagram of the	GS-PDD-	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
project boundary, physically delineating the project activity, based on the description provided in section A.3 of the PDD?	FORM Ver. 1.2				
B.3.3. Has the PD included in the flow diagram the equipment, systems and flows of mass and energy described in section A.3 of the PDD, and indicated in the diagram the emission sources and GHGs included in the project boundary and the data and parameters to be monitored?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.3.4. Does the selected methodology allow the PDs to choose whether a source or gas is to be included in the project boundary?	CDM Project Standard for Project activities §59	DR	N/A	OK	OK
B.3.5. If the selected methodology allows the project developers to choose whether a source or gas is to be included in the project boundary, do the project developers explain and justify their choices?	CDM Project Standard for Project activities §59	DR	N/A	OK	OK
B.3.6. Have all sources and GHGs necessary for the calculation of emissions been included within the project boundary?	CDM Validation and Verification Standard for Project activities §69	DR	Please refer to CAR below.	CAR-22	OK
B.3.7. Does the PDD correctly describe the project boundary and the physical delineation of	CDM Project Standard for	DR	Please see CAR-8.	CAR-8	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
the proposed project activity?	Project activities §57				
B.3.8. Has the selected methodology been correctly applied with respect to project boundary?	CDM Validation and Verification Standard for Project activities §63a	DR	Please refer to CAR below.	CAR-22	OK
The Gold Standard Methodology for Emission Reductions from Safe Drinking Water Supply					
B.3.9. The project boundary includes: a. the physical, geographical sites of the low- or zero-greenhouse gas emitting technologies to treat/supply safe drinking water installed by the project activity, b. any back-up engines or other equipment using fossil-fuel related to the low greenhouse gas emitting technologies, c. the electricity grid, in the case electricity is used by the project, and d. the household, commercial and institutional buildings where the end users of safe water provided by the project are located	SDWS. Version 1.0 §3.1.1	DR	Please indicate the project boundary following the methodology. Also, the Table presenting the 'Emissions sources included in or excluded from the project boundary' too are to be corrected following the methodology and project context.	CAR-22	OK
B.4. Establishment and description of the baseline					

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
scenario					
<p>B.4.1. Does the approved methodology that is selected by the proposed GS project prescribe the baseline scenario and hence no further analysis is required?</p> <ul style="list-style-type: none"> • 	<p>CDM Validation and Verification Standard for Project activities §94</p> <p>CDM Project Standard for Project activities §59</p>	SV	<p>a) Please indicate information of “Kenya Ceramic Jiko” and “Metal Jiko” in Section B.4.</p> <p>b) Please indicate information of existing pump house in Section B.4.</p>	CAR-23	OK
<p>B.4.2. Does the PDD identify the baseline for the proposed GS project, defined as the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed GS project?</p>	<p>CDM Validation and Verification Standard for Project activities §75</p> <p>CDM Project Standard for Project activities §61</p>	DR	The baseline scenario represents the anthropogenic emission.	OK	OK
<p>B.4.3. If the methodology requires use of the tools to identify the baseline scenario, have all those been applied?</p>	<p>CDM Validation and Verification</p>	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Standard for Project activities §77				
B.4.4. Are there relevant national and/or sectoral policies to identify the baseline scenario?	CDM Validation and Verification Standard for Project activities §81 CDM Project Standard for Project activities §64	DR	N/A	OK	OK
B.4.5. If there are relevant national and/or sectoral policies to identify the baseline scenario, have those been considered correctly in the PDD?	CDM Validation and Verification Standard for Project activities §83d	DR	N/A	OK	OK
B.4.6. Are there relevant circumstances to identify the baseline scenario?	CDM Validation and	DR	The existing system is demonstrated as the baseline scenario.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Verification Standard for Project activities §81				
B.4.7. Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	CDM Validation and Verification Standard for Project activities §78	DR	N/A	OK	OK
B.4.8. If the methodology requires several alternative scenarios to be considered in the identification of the most reasonable baseline scenario, are all credible scenarios that are in the PDD and are supplementary to those required by the methodology reasonable in the context of the proposed GS project?	CDM Validation and Verification Standard for Project activities §78	DR	N/A	OK	OK
B.4.9. If the proposed project activity includes several different facilities, technologies, outputs or services, do the alternative scenarios for each of them be identified separately?	CDM TOOL01 Tool for the demonstration and assessment of additionality	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.4.10. If the alternative scenarios for each of them be identified separately, are the realistic combinations of these be considered as possible alternative scenarios to the proposed project activity?	CDM TOOL01 Tool for the demonstration and assessment of additionality	DR	N/A	OK	OK
B.4.11. Does the list of alternative scenarios given in the PDD include the following?	CDM Validation and Verification Standard for Project activities §93	DR	N/A	OK	OK
B.4.11.1. The project activity is undertaken without being registered as a GS project	CDM Validation and Verification Standard for Project activities §93a	DR	N/A	OK	OK
B.4.11.2. All plausible alternatives	CDM Validation and Verification Standard for Project	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	activities §93b				
B.4.11.3. Comply with all applicable and enforced legislation	CDM Validation and Verification Standard for Project activities §93c	DR	N/A	OK	OK
B.4.12. Has the PD explained how the baseline scenario is established in accordance with the selected methodology(ies)?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §59	DR	This is in line with the selected methodology.	OK	OK
B.4.13. Where the procedure in the selected methodology(ies) involves several steps, has the PDs described how each step is applied and transparently documented the outcome of each step?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.4.14. Has the PD provided and explained all data used to establish the baseline scenario (variables, parameters, data sources, etc.)?	GS-PDD-FORM Ver. 1.2	DR	All data which are used in the surveys are explained clearly.	OK	OK
B.4.15. Is the identified baseline scenario reasonably supported by correct and verifiable references, assumptions, calculations and rationales?	GS-PDD-FORM Ver. 1.2	DR	The baseline scenario supported by verifiable references.	OK	OK
B.4.16. Has a transparent description of the baseline scenario been provided including	GS-PDD-FORM	DR	This is available.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
the technology(ies) that would be employed and/or the activities that would take place in the absence of the project activity?	Ver. 1.2 CDM Validation and Verification Standard for Project activities §80				
B.4.17. Has the selected methodology been correctly applied with respect to baseline identification?	CDM Validation and Verification Standard for Project activities §63b	DR	The selected methodology is applied correctly.	OK	OK
The Gold Standard Methodology for Emission Reductions from Safe Drinking Water Supply					
B.4.18. For users that boil unsafe water for drinking in the pre-project scenario, the general baseline scenario is that users would have boiled water for drinking in the absence of the project activity	SDWS. Version 1.0 §3.4.1	DR	The general baseline scenario is that users would have boiled water for drinking in the absence of the project activity.	OK	OK
B.4.19. For household end-users currently drinking unsafe water, the principles of suppressed demand are applied, such that the general baseline scenario is assumed to be that users would have boiled water for drinking in the absence of the project activity. The suppressed demand baseline does not	SDWS. Version 1.0 §3.4.2	DR	The suppressed demand is applied.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
apply to a large-scale project. A large-scale project can only account the users that boil water in the pre-project scenario. The suppressed demand baseline may be applied for institutional end-users, except where the institution is connected to a public distribution network (PDN) that supplies safe drinking water – unless justified that supplied water quality doesn't meet safe water definition (parameter SDWS 12).					
B.4.20. For the case of end-users currently drinking unsafe water because e.g. energy poverty barriers result in less than the minimum required amount of safe drinking water, the principles of suppressed demand are applied and the baseline is set as a proxy technology (water boiling of an adequate quantity of drinking water) based on the standard of living achieved by peers (adequate supply of safe drinking water). Projects applying the suppressed demand baseline shall take into account any general rules or guidelines for suppressed demand published by the Gold Standard at the time of registration and crediting period renewal, as applicable	SDWS. Version 1.0 §3.4.3	DR	The suppressed demand is applied.	OK	OK
B.4.21. Each Project or VPA shall determine the applicable baseline scenario for fuel, technology and end-user group as applicable. Refer to TPDDTEC for guidelines on baseline scenario selection and justification. Each project or VPA shall	SDWS. Version 1.0 §3.5.1	DR	Please clarify and indicate the results along with submission of documentary evidence against the following points: Pre-project practices of boiling water or drinking unsafe water (suppressed demand): Document the drinking water sources and/or treatment technologies available and used	CAR-24	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
<p>document the following pre-project conditions that define the specific baseline scenario of the end-user group(s) of the project or VPA:</p> <p>Pre-project practices of boiling water or drinking unsafe water (suppressed demand): Document the drinking water sources and/or treatment technologies available and used in the project boundary.</p> <p>Efficiency of water boiling systems: Document the baseline stove or water boiling technologies and technologies' thermal efficiency used in the project boundary.</p> <p>Baseline fuels: Document the baseline cooking fuels used and/or fuels used for water boiling in the project boundary</p>			<p>in the project boundary.</p> <p>Efficiency of water boiling systems: Document the baseline stove or water boiling technologies and technologies' thermal efficiency used in the project boundary.</p> <p>Baseline fuels: Document the baseline cooking fuels used and/or fuels used for water boiling in the project boundary</p>		
B.5. Demonstration of additionality					
<ul style="list-style-type: none"> The percentage share of total installed capacity of the specific technology in the total installed grid connected power generation capacity in the host country is equal to or less than two per cent; or The total installed capacity of the technology in the host country is less than or equal to 50 MW.)If the proposed project activity is a type of project activity which is deemed automatically additional, as defined by the applied approved methodology or standardized baseline, the methodology or standardized baseline that establish automatic additionality for the proposed project activity (including the version number and the specific 	GS-PDD-FORM Ver. 1.2 CDM TOOL01 Tool for the demonstration and assessment of additionality	DR	The water treatment technology has an adoption rate less than 20% so, the project activity is additional but please indicate the version of Community Services Activity Requirement in Section B.5. Also, the derivation of the value being less than 20% is also to be provided.	CL-4	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
paragraph, if applicable) must be specified and how the proposed project activity meets the criteria for automatic additionality in the relevant methodology or standardized baselines must be defined.)					
B.5.1. Prior consideration of CDM					
B.5.1.1. In case of retroactive projects and all projects undergoing Design Changes to include new technologies/measures, has the prior consideration been demonstrated by submission timeline?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.5.1.2. In case of retroactive projects, has the time of first submission is within one year of the project start date?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.5.1.3. In case of projects undergoing design changes, has the request for design change approval is within one year design change start date?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.5.1.4. Is the start date of the proposed project activity prior to the date of publication of the PDD for the global stakeholder consultation?	CDM Project Standard for Project activities §31	DR	N/A	OK	OK
The Gold Standard Methodology for Emission Reductions from Safe Drinking Water Supply					
B.5.1.5. The project developer shall demonstrate that the project could not or would not take place without carbon	SDWS. Version 1.0	DR	The water treatment technology has an adoption rate less than 20% so, the project activity is additional. However, please see CL-4.	CL-4	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
finance. Possible reasons for the need for carbon finance may be that the initial investment or the on-going marketing, distribution, quality control, manufacturing and maintenance costs are unaffordable for the target population.	§3.3.1				
B.5.1.6. The project developer shall demonstrate additionality by conforming to additionality requirements of one of the options below, a. Applicable GS4GG Activity Requirements; b. CDM Tool 01 – Tool for the Demonstration and Assessment of Additionality; c. CDM Tool 19- Demonstration of additionality of microscale project activities; (not applicable to Gold Standard microscale projects) d. CDM Tool 21 – Demonstration of additionality of small-scale project activities; (applicable to small-scale projects only) e. An approved Gold Standard VER additionality tool	SDWS. Version 1.0 §3.3.2	DR	Applicable GS4GG Activity Requirements: - Community Services Activity Requirements - Usage Rate Requirements	OK	OK
B.6. Sustainable Development Goals (SDG) outcomes					
B.6.1. Has the PDs specified the relevant SDG target for each of three SDGs addressed by the 73project?	GS-PDD-FORM Ver. 1.2	DR	Please reframe SDG15 target because “by 2020” is not a suitable expression for this project activity.	CAR-25	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.1. Explanation of methodological choices/approaches for estimating the SDG outcome					
B.6.1.1. Has the PDs explained how the methods or methodological steps in the selected methodology(ies), for calculating baseline and project outcomes are applied?	GS-PDD-FORM Ver. 1.2	DR	Please see below.		
B.6.1.1.1. Baseline	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
B.6.1.1.2. Project	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
B.6.1.1.3. Leakage	GS-PDD-FORM Ver. 1.2	DR	Please indicate the leakage emission information of the project activity in Section B.6.1.	CAR-26	OK
B.6.1.1.4. Net benefit	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
B.6.1.2. Has the PDs clearly stated which equations will be used in calculating net benefit?	GS-PDD-FORM Ver. 1.2	DR	Equations are stated clearly.	OK	OK
B.6.1.3. Has the PDs explained and justified all relevant methodological choices including the following?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §72	DR	Please see below.		

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.1.3.1. Where the methodology(ies) include different scenarios or cases, indicate and justify which scenario or case applies to the project activity	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §72	DR	N/A	OK	OK
B.6.1.3.2. Where the methodology(ies) provide different options to choose from , indicate and justify which option is chosen for the project activity	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §72	DR	N/A	OK	OK
B.6.1.3.3. Where the methodology(ies) allow different default values, indicate and justify which of the default values have been chosen for the project activity.	GS-PDD-FORM Ver. 1.2	DR	The default values are indicated.	OK	OK
B.6.2. Data and parameters fixed ex ante					
B.6.2.1. Have the PDs included a compilation of information on the data and parameters that are not monitored during the crediting period but are determined before the registration and remain fixed throughout the crediting period under section B.6.3 of the PDD?	GS-PDD-FORM Ver. 1.2	DR, SV	a) There are some missing parameters in Section B.6.2 based on the applied methodology (e.g. $TDL_{e,c}$). Please also indicate these missing parameters in Section B.6.2. b) Please indicate the necessary references in Section B.6.2 (e.g. WHO, 2017). c) The parameter IDs are missing and so are the corresponding description as relevant and provided in the methodology. For e.g., parameter ID SDWS 1, SDWS 4 among others.	CAR-27	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
			<p>d) The share of each stove technology being used in the project boundary (SDWS 6) has not been provided.</p> <p>e) Provide evidence for SDWS 7 expected lifetime.</p> <p>f) Please correct the efficiency of the baseline charcoal stove currently indicated as 10%</p> <p>g) The source and value for fNRB are to be updated.</p> <p>h) Please clarify and correct the inconsistent presentation for the parameter QPWp.</p> <p>i) For “Stove technologies used in the project boundary” parameter, please add the cooking technologies “Kenya Ceramic Jiko” and “Metal Jiko” in “Values applied” row.</p>		
B.6.2.2. Are the data that are calculated with the equations provided in the selected methodology(ies) or default values specified in the methodology(ies) included in the compilation?	GS-PDD-FORM Ver. 1.2	DR	They are included in the compilation.	OK	OK
B.6.2.3. Are the following information regarding the data and parameters specified correctly?	GS-PDD-FORM Ver. 1.2	DR	Please see below.		
B.6.2.3.1. Relevant SDG indicator	GS-PDD-FORM Ver. 1.2	DR	Please provide the relevant SDG indicator for each parameter in Section B.6.2.	CAR-28	OK
B.6.2.3.2. Data/parameter	GS-PDD-FORM Ver. 1.2	DR	These are available.	OK	OK
B.6.2.3.3. Data/parameter unit	GS-PDD-FORM Ver. 1.2	DR	These are available.	OK	OK
B.6.2.3.4. Description of the data/parameter	GS-PDD-	DR	These are available.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	FORM Ver. 1.2				
B.6.2.3.5. Source of data	GS-PDD-FORM Ver. 1.2	DR	These are available.	OK	OK
B.6.2.3.6. Values applied to data/parameter	GS-PDD-FORM Ver. 1.2	DR	These are available.	OK	OK
B.6.2.4. Where applied values have been measured, are the following included in the PDD?	GS-PDD-FORM Ver. 1.2	DR	Please see below.		
B.6.2.4.1. The equipment used	GS-PDD-FORM Ver. 1.2	DR	Surveys were used.	OK	OK
B.6.2.4.2. The standards used	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.2.4.3. Responsible person/entity having undertaken the measurement	GS-PDD-FORM Ver. 1.2	DR	The project developer and the project representative conducted the surveys.	OK	OK
B.6.2.4.4. The date of measurement(s)	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.2.4.5. The frequency of measurement(s)	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.2.4.6. The measurement results	GS-PDD-FORM	DR	These are available in the Excel sheet.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Ver. 1.2				
B.6.2.5. Has the purpose of data been chosen as one of the following for each data/parameter?	GS-PDD-FORM Ver. 1.2	DR	Please see below.		
B.6.2.5.1. Calculation of baseline;	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
B.6.2.5.2. Calculation of project;	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
B.6.2.5.3. Calculation of leakage.	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-26.	CAR-26	OK
B.6.3. Ex ante estimation of SDG impact					
B.6.3.1. Do the steps taken and equations applied to calculate following comply with the requirements of the selected baseline and monitoring methodology including applicable tool(s)?	CDM Project Standard for Project activities §71 CDM Validation and Verification Standard for Project activities §110	DR	<p>a) In the second table in Section B.6.3, units of C_b, $X_{\text{cleanboil},y}$ parameters are stated as “fraction”. However, in the “Value” column the values are stated as percentage. Please correct this contradiction.</p> <p>b) Please demonstrate “BE” calculations of SDG13 parameter in Section B.6.3.</p> <p>c) Some parameters given in Section B.6.2 (for SGD 13) are not available in the table stated Section B.6.3 ($\eta_{w,b}$). Please clarify this contradiction.</p> <p>d) Please demonstrate the project emission calculations in Section B.6.3.</p> <p>e) Please clarify and correct the number of days for dry season and wet season. Also, provide corresponding evidence too.</p>	CAR-29	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
			f) Please correct the values in the table for SDG 15 and SDG 6 also correcting the baseline and project estimate values.		
B.6.3.1.1. project outcome	CDM Project Standard for Project activities §71 CDM Validation and Verification Standard for Project activities §110	DR	This is available.	OK	OK
B.6.3.1.2. baseline outcome	CDM Project Standard for Project activities §71 CDM Validation and Verification Standard for Project activities §110	DR	Please see CAR-29.	CAR-29	OK
B.6.3.1.3. leakage	CDM Project Standard for Project activities §71 CDM Validation and	DR	Please indicate the leakage values of SDGs stated in Section B.6.3.	CAR-30	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Verification Standard for Project activities §110				
B.6.3.1.4. Net outcomes	CDM Project Standard for Project activities §71 CDM Validation and Verification Standard for Project activities §110	DR	Please see CAR-29.	CAR-29	OK
B.6.3.2. Where the methodology allows for selection between options for equations or parameters, has adequate justification been provided in the PDD?	CDM Validation and Verification Standard for Project activities §111	DR	N/A	OK	OK
B.6.3.3. Has the PDs used the values contained in the tables in section B.6.2 of the PDD for data and parameters available before registration?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-29.	CAR-29	OK
B.6.3.4. Has the PDs used the estimates contained in the table in section B.6 of the PDD 80roject data/parameters not available before registration and	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-29.	CAR-29	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
monitored during the crediting period?					
B.6.3.5. If any of these estimates has been determined by a sampling approach, has the PD provided a description of the sampling efforts undertaken in accordance with the “Standard for sampling and surveys for CDM project activities and programme of activities”?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.3.6. Has the PDs provided a sample calculation for each equation used?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.3.7. Have the PDs provided a sample calculation for each equation used, substituting the values used in the equations?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.6.3.8. Is it explained and clearly stated how the procedures in the approved methodology or standardized baseline(s) to calculate emissions like project emissions, baseline emissions and leakages are applied by the PDs?	CDM Validation and Verification Standard for Project activities §112	DR	Please see CAR-29.	CAR-29	OK
B.6.3.9. Has the selected methodology or standardized baseline(s) been correctly and transparently applied with respect to algorithms and/or formulae used to determine emission reductions?	CDM Validation and Verification Standard for Project activities §63c	DR	Please see CAR-29.	CAR-29	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
The Gold Standard Methodology for Emission Reductions from Safe Drinking Water Supply					
B.6.1.1. Is the baseline emission factor determined using equation (1) given in the methodology?	SDWS Version 1.0 §3.6.1	DR	Please indicate the baseline emission factor value in Section B.6.3.	CAR-31	OK
B.6.1.2. Is the specific energy required to boil water for the baseline technology accounts for the stove efficiency following equation (2) of the methodology?	SDWS Version 1.0 §3.6.2	DR	This is available.	OK	OK
B.6.1.3. Are the baseline emissions determined using equation (3) given in the methodology?	SDWS Version 1.0 §3.6.3	DR	Please see CAR-29.	CAR-29	OK
B.6.1.4. Is the quantity of safe drinking water provided by the project is calculated using one of two methods provided in the methodology?	SDWS Version 1.0 §3.6.4-8	DR	This is available.	OK	OK
B.6.1.5. Are the project emissions determined using equation (8) to (10) given in the methodology	SDWS Version 1.0 §3.7	DR	Please see CAR-29.	CAR-29	OK
B.6.1.6. Are the leakage emissions properly accounted as given in the methodology	SDWS Version 1.0 §3.8	DR	Please see CAR-30.	CAR-30	OK
B.6.2. Summary of the ex-ante estimates of each SDG impact					
B.6.2.1. Have the PDs summarized the results of the ex-ante calculation of emission reductions for all years of the crediting period, using the tabular format?	GS-PDD-FORM Ver. 1.2	DR	Please revise the baseline estimate values of years 2022 and 2027 for SDG13, SDG15 and SDG6 parameters.	CAR-32	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.7. Monitoring Plan					
B.7.1. Data and parameters to be monitored					
B.7.1.1. In the data/parameter tabular formats for monitoring, has the name of each relevant SDG indicator been included?	GS-PDD-FORM Ver. 1.2	DR	<p>a) There are some missing parameters in Section B.7.1 based on the applied methodology (e.g. $f_{NRB,f,y}$, $EC_{p,y}$). Please also indicate these missing parameters in Section B.7.1.</p> <p>b) Please indicate the purpose of data for each parameter in Section B.7.1.</p> <p>c) Please indicate QA/QC procedures for each parameter in Section B.7.1.</p> <p>d) Please delete the repeated rows of SDG3 in Section B.7.1.</p> <p>e) Please indicate the parameter ID as per the methodology.</p> <p>f) The monitoring parameter for the relevant safeguarding principles 9.5 is also missing, pertaining to the health and safety measures in context of chlorine.</p>	CAR-33	OK
B.7.1.2. In the data/parameter tabular formats for monitoring, has the name of each data/parameter been included?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-33.	CAR-33	OK
B.7.1.3. Has the unit of each data/parameter been included?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-33.	CAR-33	OK
B.7.1.4. Has the description of each data/parameter been included?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-33.	CAR-33	OK
B.7.1.5. Has the source of each data/parameter been included?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-33.	CAR-33	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.7.1.6. Where several sources of data/parameters are used, is the choice of data/parameter sources explained and justified?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-33.	CAR-33	OK
B.7.1.7. Has the applied value of each data/parameter been included?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-33.	CAR-33	OK
B.7.1.8. Has the measurement methods and procedures been included?)	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-33.	CAR-33	OK
B.7.1.9. Has the PDs included which measurement equipment is used for monitoring?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-33.	CAR-33	OK
B.7.1.10. Have the PDs included description of calibration procedures for the monitoring equipment including the following?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.7.1.10.1. Frequency of the calibration	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §81c ACM 0002 Version 20	DR	N/A	OK	OK
B.7.1.10.2. Accuracy of the calibration	CDM Project Standard for Project activities	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	§81b				
B.7.1.10.3. Uncertainty of the calibration	CDM Project Standard for Project activities §81b	DR	N/A	OK	OK
B.7.1.10.4. Calibrating agency/person	CDM Project Standard for Project activities §81c	DR	N/A	OK	OK
B.7.1.10.5. The relevant national/ international standards	CDM Project Standard for Project activities §81c	DR	N/A	OK	OK
B.7.1.11. Has the accuracy level of the measurement method included?	CDM Project Standard for Project activities §81b	DR	N/A	OK	OK
B.7.1.12. Has the responsible person/entity for the measurements included?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.7.1.13. Has the interval for the measurements included?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
B.7.1.14. Has the monitoring frequency for each data/parameter been included?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-33.	CAR-33	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.7.1.15. Has the QA/QC procedures of each data/parameter been included?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §81a ACM 0002 Version 20.0	DR	Please see CAR-33.	CAR-33	OK
B.7.1.16. Has the purpose of data/parameter been chosen as one of the following for each data/parameter?	GS-PDD-FORM Ver. 1.2	DR	Please see below.		
B.7.1.16.1. Calculation of baseline outcome;	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-33.	CAR-33	OK
B.7.1.16.2. Calculation of project outcome;	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-33.	CAR-33	OK
B.7.1.16.3. Calculation of leakage.	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-33.	CAR-33	OK
B.7.1.17. Have the PDs developed and described the monitoring plan for the proposed project activity in accordance with the selected methodology(ies) and all other applicable rules and requirements?	CDM Project Standard for Project activities §78 CDM Validation and Verification Standard for	DR	Please see CAR-33.	CAR-33	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Project activities §117				
B.7.1.18. Does the monitoring plan include all data, parameters and related information required by the selected methodology(ies)?	CDM Validation and Verification Standard for Project activities §118a-ii ACM 0002 Version 20.0	DR	Please see CAR-33.	CAR-33	OK
B.7.1.19. Are the monitoring arrangements described in the monitoring plan feasible within the project design?	CDM Validation and Verification Standard for Project activities §118b	DR	Please see CAR-33.	CAR-33	OK
The Gold Standard Methodology for Emission Reductions from Safe Drinking Water Supply					
B.7.1.20. Are the following parameters defined in section B.7.1 of the PDD:	SDWS Version 1.0	DR	Please see below.		
B.7.1.20.1. $M_{q,y}$	SDWS Version 1.0	DR	This is available.	OK	OK
B.7.1.20.2. SDG claims	SDWS Version 1.0	DR	Please see CAR-33.	CAR-33	OK
B.7.1.20.3. Water hygiene education campaigns	SDWS Version 1.0	DR	This is available.	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.7.1.20.4. $f_{NRB,f,y}$	SDWS Version 1.0	DR	Please see CAR-33.	CAR-33	OK
B.7.1.20.5. $X_{cleanboil,y}$	SDWS Version 1.0	DR	This is available.	OK	OK
B.7.1.20.6. $Q_{m,y}$	SDWS Version 1.0	DR	This is available.	OK	OK
B.7.1.20.7. QPW_p	SDWS Version 1.0	DR	Please see CAR-33.	CAR-33	OK
B.7.1.20.8. $HN_{p,y}$	SDWS Version 1.0	DR	This is available.	OK	OK
B.7.1.20.9. $HH_{p,y}$	SDWS Version 1.0	DR	This is available.	OK	OK
B.7.1.20.10. $DO_{p,y}$	SDWS Version 1.0	DR	This is available.	OK	OK
B.7.1.20.11. $N_{p,y}$	SDWS Version 1.0	DR	Please see CAR-33.	CAR-33	OK
B.7.1.20.12. $U_{p,y}$	SDWS Version 1.0	DR	Please see CAR-33.	CAR-33	OK
B.7.1.20.13. $t_{p,y}$	SDWS Version 1.0	DR	Please see CAR-33.	CAR-33	OK
B.7.1.20.14. $DP_{p,y}$	SDWS Version 1.0	DR	Please see CAR-33.	CAR-33	OK
B.7.1.20.15. $DN_{p,y}$	SDWS Version 1.0	DR	Please see CAR-33.	CAR-33	OK
B.7.1.20.16. $P_{p,f,y}$	SDWS Version 1.0	DR	Please see CAR-33.	CAR-33	OK
B.7.1.20.17. $EC_{p,y}$	SDWS Version 1.0	DR	Please see CAR-33.	CAR-33	OK
B.7.1.20.18. LE_y	SDWS Version 1.0	DR	Please see CAR-33.	CAR-33	OK
B.7.2. Sampling plan					

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.7.2.1. Are the data and parameters monitored in section B.7.1 of the PDD determined by a sampling approach?	GS-PDD-FORM Ver. 1.2 CDM validation and verification standard for 89project activities §29e CDM Guideline: Sampling and surveys for CDM 89project activities and programmes of activities	DR	Project survey was done for some of the parameters.	OK	OK
B.7.2.2. If the data and parameters monitored in section B.7.1 of the PDD are to be determined by a sampling approach, has the PD provided a description of the sampling plan in accordance with the recommended outline for a sampling plan in the latest applicable version of “Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities”?	GS-PDD-FORM Ver. 1.2 CDM Standard: Sampling and surveys for CDM project activities and programmes	DR	This is available.	OK	OK

*DR= Document Review, I= Interview, SV= Site Visit

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	of activities §29 §30 §31 §32 §33				
B.7.2.3. If the sampling approach is used by the PDs, does the sampling plan present a reasonable approach for obtaining unbiased, reliable estimates of the variables?	CDM Guideline: Sampling and surveys for CDM project activities and programmes of activities §40a	DR	The sampling plan presents a reasonable approach.	OK	OK
B.7.2.4. If the sampling approach is used by the PDs, are the elements of objectives and reliability requirements complete?	CDM Guideline: Sampling and surveys for CDM project activities and programmes of activities §40a-I	DR	The elements are complete.	OK	OK
B.7.2.5. If the sampling approach is used by the PDs, do the requirements specified agree with those stated in the appropriate standards?	CDM Guideline: Sampling and surveys for CDM project activities	DR	The requirements agree with the appropriate standards.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	and programmes of activities §40a-I				
B.7.2.6. If the sampling approach is used by the PDs, is the population in the sampling plan clearly defined?	CDM Guideline: Sampling and surveys for CDM 91roject activities and programmes of activities §40b	DR	The minimum sample size required by the methodology is 100 for population over 1000 and PD took 145 samples.	OK	OK
B.7.2.7. If the sampling approach is used by the PDs, is the proposed sampling approach clear?	CDM Guideline: Sampling and surveys for CDM 91roject activities and programmes of activities §40c	DR	The proposed sample approach is clear.	OK	OK
B.7.2.8. If the sampling approach is used by the PDs, does the sampling approach comply with the description of the population?	CDM Guideline: Sampling and surveys for CDM 91roject	DR	The sampling approach complies with the description of the population.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	activities and programmes of activities §40c-ii				
B.7.2.9. If the sampling approach is used by the PDs, is the proposed sample size adequate to achieve the minimum confidence/precision requirements?	CDM Guideline: Sampling and surveys for CDM 92roject activities and programmes of activities §40d	DR	This is available.	OK	OK
B.7.2.10. If the sampling approach is used by the PDs, is the ex-ante estimate of the population variance needed 92roject calculation of the sample size adequately justified?	CDM Guideline: Sampling and surveys for CDM 92roject activities and programmes of activities §40d	DR	It is adequately justified.	OK	OK
B.7.2.11. If the sampling approach is used by the PDs, is the sample representative of the population?	CDM Guideline: Sampling and surveys for CDM	DR	The sample is representative of the population.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	93roject activities and programmes of activities §40e				
B.7.2.12. If the sampling approach is used by the PDs, is it identified how the sampling frame would be kept?	CDM Guideline: Sampling and surveys for CDM 93roject activities and programmes of activities §40e-ii	DR	This is available.	OK	OK
B.7.2.13. If the sampling approach is used by the PDs, are the methods of data collection clear and unambiguous?	CDM Guideline: Sampling and surveys for CDM 93roject activities and programmes of activities §40f-I	DR	The methods of data collection are clear and unambiguous.	OK	OK
B.7.2.14. If the sampling approach is used by the PDs, are the procedures for the data measurements defined appropriately and clearly?	CDM Guideline: Sampling and surveys	DR	The data measurements are defined appropriately and clearly.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	for CDM 94roject activities and programmes of activities §40g				
B.7.2.15. If the sampling approach is used by the PDs, do the procedures for measurements adequately provide for minimizing non-sampling errors?	CDM Guideline: Sampling and surveys for CDM 94roject activities and programmes of activities §40g	DR	This is available.	OK	OK
B.7.2.16. If the sampling approach is used by the PDs, is the quality control and assurance strategy adequate?	CDM Guideline: Sampling and surveys for CDM 94roject activities and programmes of activities §40g-I	DR	The quality control and assurance is adequate.	OK	OK
B.7.2.17. If the sampling approach is used by the PDs, are the proposed skill sets, qualifications and experience of the	CDM Guideline: Sampling	DR	The personnel are adequate.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
personnel to be engaged to conduct sampling adequate?	and surveys for CDM 95project activities and programmes of activities §40h-I				
B.7.3. Other elements of monitoring plan					
B.7.3.1. Has the operational and management structure been given in the monitoring plan to 95project emission reductions and any leakage generated by the 95project activity?	GS-PDD-FORM Ver. 1.2 CDM 95project standard for 95project activities §82a	DR	This is available.	OK	OK
B.7.3.2. Has the PD clearly indicated the responsibilities and institutional arrangements for data collection and archiving?	GS-PDD-FORM Ver. 1.2 CDM 95project standard for 95project activities §82c	DR	This is available.	OK	OK
C. Duration and crediting period					

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
C.1. Duration of project					
C.1.1. Start date of project					
C.1.1.1. Has the start date of the project, in the format of DD/MM/YYYY been stated under section C.1.1 of the PDD?	GS-PDD-FORM Ver. 1.2 GS4GG Principles & Requirements Ver. 1.2 CDM 96project standard for 96project activities §85	DR	Please indicate the start date of the project activity in the format of DD/MM/YYYY and describe the reason of choosing this date in Section C.1.1.	CAR-34	OK
C.1.1.2. Has the PD described how this date has been determined?	GS-PDD-FORM Ver. 1.2 CDM 96project standard for 96project activities §85	DR	Please see CAR-34.	CAR-34	OK
C.1.1.3. Has the PD provided evidence to support this date?	GS-PDD-FORM Ver. 1.2 CDM 96project standard for	DR	Please see CAR-34.	CAR-34	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	97project activities §85				
C.1.2. Expected operational lifetime of project					
C.1.2.1. Is the expected operational lifetime of the project activity stated in years and months under section C.1.2 of the PDD?	GS-PDD-FORM Ver. 1.2 CDM 97project standard for 97project activities §86	DR	Please provide the evidence document for the expected operational lifetime of the project activity.	CAR-35	OK
C.2. Crediting period of project					
C.2.1. Start date of crediting period					
C.2.1.1. Is the start date of the crediting period of the project activity given in DD/MM/YYYY format?	GS-PDD-FORM Ver. 1.2	DR	Please indicate the start date of the crediting period in the format of DD/MM/YYYY.	CAR-36	OK
C.2.1.2. Have the PDs determined only one start date for the crediting period, even in cases of phased implementation of the proposed project activity?	CDM 97project standard for 97project activities §89	DR	Please see CAR-36.	CAR-36	OK
C.2.1.3. Has the PDs used any qualifications to the start date, such as “expected”?	CDM 97project	DR	Please see CAR-36.	CAR-36	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	standard for 98project activities §90				
C.2.2. Total length of crediting period					
C.2.2.1. Is the length of the crediting period of the proposed project activity stated in years and months under section C.2.3 of the PDD?	GS-PDD-FORM Ver. 1.2	DR	This is indicated as “5 years renewable twice, 15 years of total crediting period.”	OK	OK
D. Summary of Safeguarding Principles and Gender Sensitive Assessment					
D.1. Safeguarding principles that will be monitored					
D.1.1. Has the safeguarding principles that will be monitored been summarized including the mitigation measures added to the monitoring plan? Have the PDs carried out an analysis of the social, economic and environmental impacts following the GS4GG Safeguarding Principles and Requirements?	GS-PDD-FORM Ver. 1.2	DR	This is available in Appendix 1 but please indicate the justification for each principle.	CAR-37	OK
D.1.2. Are all the safeguarding principles stated?	GS-PDD-FORM Ver. 1.2	DR	This is available in Appendix 1.	OK	OK
D.1.3. Are all the relevant assessment questions included pertaining to the safeguarding principles?	GS-PDD-FORM Ver. 1.2	DR	This is available in Appendix-1.	OK	OK
D.1.4. Is the relevance of the principle cited correctly (Yes/potentially/no)?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-37.	CAR-37	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
D.1.5. Is proper justification for the safeguarding principle indicated?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-37.	CAR-37	OK
D.2. Assessment that project complies with 'gender sensitive' requirements					
D.2.1. Has the evidence been provided that the project concept and design cover the overall societal context from a gender perspective?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
D.2.2. Does the project reflect the key issues and requirements of Gender Sensitive design and implementation as outlined in the Gender Policy?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
D.2.3. Has it been explained how the project align with existing country policies, strategies and best practices?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
D.2.4. Has an expert been involved for the Gender Safeguarding Principles & Requirements, where required?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
D.2.5. Has it been explained how the project address the questions raised in the Gold Standard Safeguarding Principles & Requirements document?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
D.2.6. Does the project apply the Gold Standard Stakeholder Consultation & Engagement Procedure, Requirements & Guidelines?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
E. Summary of Local Stakeholder Consultation					
E.1. Summary of stakeholder mitigation measures					
E.1.1. Has the PD described the process by which comments from stakeholders have been invited for the project?	GS-PDD-FORM Ver. 1.2	DR	This is available in "Stakeholder Consultation Report", V2.0.	OK	OK
E.1.2. Has the PD conducted the stakeholder consultation in accordance with GS4GG Stakeholder Consultation Requirements and Guidelines?	GS-PDD-FORM Ver. 1.2	DR	The stakeholder consultation is in accordance with GS4GG Stakeholder Consultation Requirements and Guidelines.	OK	OK
E.1.3. Has the PD demonstrated how due steps/actions were taken to appropriately engage stakeholders and solicit comment?	CDM 100project standard for 100project activities §94	DR	This is available in "Stakeholder Consultation Report", V2.0.	OK	OK
E.1.4. Has the PD invited local stakeholders to provide comments in an open and transparent manner, in a way that facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted?	CDM project standard for project activities §99 CDM validation and verification standard for project activities §132	DR	This is available in "Stakeholder Consultation Report", V2.0.	OK	OK
E.1.5. Has the PDs described the proposed project in	CDM	DR	This is available in "Stakeholder Consultation Report",	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
a manner that allows the stakeholders to understand the project activity, taking into account confidentiality provisions of the applicable CDM M&Ps and requirements?	101roject standard for 101roject activities §101		V2.0.		
E.1.6. Has the PD identified the stakeholders that have made comments?	GS-PDD-FORM Ver. 1.2	DR	This is available in “Stakeholder Consultation Report”, V2.0.	OK	OK
E.1.7. Has the PD provided a summary of the stakeholder comments in a complete and clear manner?	CDM 101roject standard for 101roject activities §105 CDM validation and verification standard for project activities §132f	DR	This is available in “Stakeholder Consultation Report”, V2.0.	OK	OK
E.1.8. Has the PDs provided information demonstrating that all comments received have been considered?	CDM 101roject standard for 101roject activities §107	DR	This is available in “Stakeholder Consultation Report”, V2.0.	OK	OK
E.1.9. Is the process on how the PDs taken into account of all comments received described in the PDD?	CDM 101roject standard for	DR	This is available in “Stakeholder Consultation Report”, V2.0.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	102project activities §107 CDM validation and verification standard for project activities §132g				
E.2. Final continuous input / grievance mechanism					
E.2.1. Has the relevant methods and all details of chosen methods been provided in the related tabular format?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
E.2.2. Has the following been provided as the mandatory methods as part of the final continuous input / grievance mechanism	GS-PDD-FORM Ver. 1.2	DR	Please see below.		
E.2.2.1. Continuous input / grievance expression process book	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
E.2.2.2. GS contact	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
F. Other Requirements					
F.1. Forward action requests (FARs) identified during preliminary GS review and/or LSC review					

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
F.1.1. Are there any FARs from the preliminary GS review and/or LSC review stages?	CDM validation and verification standard for project activities §36	DR	This is the validation process (Regular Cycle). Therefore, there is no FAR.	OK	OK
Appendix-1 Safeguarding principles assessment					
5. Has the safeguarding principles assessment been completed for each principle using the relevant tabular format?	GS-PDD-FORM Ver. 1.2	DR	This is available.	OK	OK
6. Has the justification of relevance for the related safeguarding principles assessment been provided?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-37.	CAR-37	OK
7. If the respond is yes for the justification of relevance, has all relevant requirements from the GS4GG Safeguarding Principles and Requirements document been included in the tabular format?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-37.	CAR-37	OK
8. If the respond is no or potentially for the justification of relevance, has this been justified clearly and adequately?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-37.	CAR-37	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
Appendix-2 Contact information of 104 project participants					
9. Is the contact information of PPs provided in Appendix 2?	GS-PDD-FORM Ver. 1.2	DR	Please provide the contact information of Project Participants in Appendix 2 as well (Makohaa, Genius Watter, PENWA).	CAR-38	OK
Appendix 3- LUF additional information					
10. In case of land use and forest projects, has the additional information been provided in Appendix-3?	GS-PDD-FORM Ver. 1.2	DR	Please fill in the blanks in the table given in Appendix 3 (or specify them as N/A).	CL-5	OK
Appendix-4 Summary of approved design changes					
11. If applicable, is the summary of the approved design changes been provided?	GS-PDD-FORM Ver. 1.2	DR	Please delete the instruction part and Revision History table under Appendix 4, and indicate this section as "N/A".	CAR-39	OK

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Table 2 – Resolution of Corrective Action, Forward Action and Clarification Requests

Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. To Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
CAR-1 Please delete the instruction part on the cover page.	1.	Instructions in the cover page is deleted.	Review-1: Ok Closed (The instruction part was deleted on the cover page.)
CAR-2 Please indicate the full name of the project developer on the cover page and in Appendix 2 (i.e. Offgridsun S.R.L.).	1.7.	The name of project developer is revised.	Review-1: Ok Closed (The name of the project developer was revised on the cover page.)
CAR-3 a) In ER Calculation Excel sheet, the emission reduction value is indicated as "19,246 tCO ₂ e". However, in Table 1 in the PDD, this value stated as "19,24619,246 tCO ₂ e". Please correct the contradiction. b) Please provide SDG contributions in the ER Calculation Excel sheet for each parameter indicated in Table 1 in the PDD.	2.	a) Table 1 is revised. b) ER Calculation Sheet is revised.	Review-1: a) Ok Closed (The emission reduction values indicated in Table 1 and in the ER Calculation Excel sheet are same.) b) Ok Closed (SDG contributions were added in the ER Calculation Excel sheet.)
CAR-4 a) Please indicate the references where necessary in Section A.1 (e.g. WASREB Impact Report). Also, please clarify and correct the statement '...drinking water quality by waters service providers is rated as unacceptable (<90%) with an average...'. b) In the first paragraph in Section A.1, it is indicated that the one of the project participant is "Makohaa (CBO)". However, in the second paragraph in Section A.1, the other project participant is indicated as "PENWA CBO". Please clarify this contradiction.	A.1.1.	a) Reference to the report has been provided and explanation is revised. b) Both Makohaa and PENWA are local project participants. Epicenter was a part of the project at the design stage but left the intervention. c) Estimated start date for rehabilitation works is December 2022. The project will start operation in early December 2023. Please see attached the workplan.	Review-1: a) Ok Closed (The necessary references were added in Section A.1 and the mentioned statement was revised.) b) Ok Closed (The clarification was made.) c) Ok Closed (The milestones of the project activity were indicated in Section A.1 and the work plan was provided to the DOE.)

* CAR= Corrective Action Request, FAR= Forward Action Request, CL= Clarification Request

Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. To Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
c) Please indicate the estimated start date of the project activity in Section A.1 of the PDD.			
CAR-5 Please provide a brief description of the baseline scenario in Section A.1.	A.1.2.	A description of baseline scenario is provided in Section A.1 Review 2: Definition of the baseline scenarios as per the applied methodology is now added to Section A.1.	Review-1: The baseline scenario is not explicitly stated in Section A.1. The existing scenario is stated clearly in the section. If the baseline scenario and the existing scenario are the same, please specify this in Section A.1. Review-2: Ok Closed (The baseline scenario is indicated in section A.1 of the revised PDD)
CAR-6 Please indicate the estimated annual average and total GHG emission reductions for the chosen crediting period in Section A.1.	A.1.3.	Annual and total emission reductions estimated have been provided.	Review-1: Ok Closed (The estimated annual average and total GHG emission reductions were indicated in Section A.1.)
CAR-7 a) Please indicate the version of "Gold Standard approved Community Services Activity Requirements" in Section A.1.1. b) Please indicate the version of "GHG Emission Reductions and Sequestration Product Requirements" in Section A.1.1. c) Please provide the signed and sealed letter on company letterhead that the project hasn't been registered, or hasn't been seeking registration under any other GHG programs.	A.1.1.1.	a) Community Services Activity Requirements v 1.2 is applied and indicated in the PDD. b) GHG Emission Reductions and Sequestration Product Requirements v 1.2 is applied and indicated in the PDD. c) Letter provided (CAR 7c letter of registration OGS). d) Memorandum signed with PENWA is provided. A new memorandum is prepared to include all project participants and is also provided. e) ODA Declaration provided. f) Deleted.	Review-1: a) Ok Closed (The version of "Gold Standard approved Community Services Activity Requirements" was indicated in Section A.1.1.) b) Ok Closed (The version of "GHG Emission Reductions and Sequestration Product Requirements" was indicated in Section A.1.1.) c) Ok Closed (The declaration was provided.) d) Ok Closed (The signed memorandum

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Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. To Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
<p>d) Please provide the signed memorandum which is indicated in Section A.1.1.</p> <p>e) Please provide the ODA declaration which is indicated in Section A.1.1.</p> <p>f) Please delete the unused bullets in Section A.1.1 (on page 13).</p>			<p>with PENWA was provided.)</p> <p>e) Ok Closed (The ODA declaration was provided.)</p> <p>f) Ok Closed (The unused bullets were deleted in Section A.1.1.)</p>
<p>CAR-8</p> <p>a) Please indicate more detailed information for the location of the project activity (e.g. region, province, map and so on).</p> <p>b) The KMZ document of the project activity was provided but please indicate the project coordinates in Section A.2 of the PDD.</p>	A.2.1.	<p>a) Section A.2 is revised to include map and coordinates.</p> <p>b) Section A.2. is revised accordingly.</p>	<p>Review-1:</p> <p>a) Ok Closed (More detailed information for the location of the project activity was indicated in Section A.2.)</p> <p>b) Ok Closed (The project coordinates were indicated in Section A.2.)</p>
<p>CAR-9</p> <p>a) Please provide the evidence document of the date for the new management activity stated in Section A.3.</p> <p>b) Please remove the yellow highlights throughout the PDD.</p> <p>c) Please provide the photographic evidences of Usigu Twin Slow Sand Filter and Automatic Chlorine Chemical Dispenser (the real ones).</p> <p>d) Please indicate the information about vending points (e.g. number of them, smart meters and so on) in Section A.3.</p> <p>e) Please indicate information about the expected capacities of the tanks which will be used.</p>	A.3.1.	<p>a) Proof of Action Aid handing over the system to PENWA is provided. Please refer to attachment "Minute of PENWA meeting to change management"</p> <p>b) Removed.</p> <p>c) Pictures provided in File "Responses to CARs"</p> <p>d) The existing 10 water kiosks will be rehabilitated and used as vending points. Then, another 10 kiosks will be added to the system progressively. All points will be equipped by smart meters.</p> <p>e) The information about tanks is included in Section A.3. Please see the system technical assessment report.</p>	<p>Review-1:</p> <p>a) Ok Closed (The evidence document was provided.)</p> <p>b) Ok Closed (Yellow highlighted parts were removed throughout the PDD.)</p> <p>c) Ok Closed (The photographic evidences were provided.)</p> <p>d) Ok Closed (The information about vending points were indicated in Section A.3.)</p> <p>e) Ok Closed (The expected capacities of the tanks were indicated in Section A.3 and the relevant evidence document was provided.)</p>

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Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. To Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
CAR-10 As the proposed GS project activity involves alteration of an existing installation the project description shall clearly state the differences resulting from the project activity compared to the pre-project situation. Also, the clear depiction of existing facilities and interventions there upon along with specifications and timeframes are to be provided clearly.	A.3.4.	The existing system and proposed extensions are explained in Section A.3. The improvements to be done are summarized in the PDD. More information could be found in attached File "Responses to CARs".	Review-1: Ok Closed (The differences resulting from the project activity compared to the pre-project situation were stated clearly in Section A.3.)
CAR-11 The systems and equipment that will be installed are not indicated clearly. The technologies and measures to be employed and/or implemented by the project activity are to be described including a list of facilities, systems and equipment that will be installed and/or modified by the project activity.	A.3.5.		Review-1: Ok Closed (The technologies and measures to be employed and/or implemented by the project activity were indicated in Section A.3.)
CAR-12 Please indicate the age and average lifetime of the equipment based on manufacturer's specifications and industry standards in Section A.3.	A.3.9.	The average lifetimes of the system components are given in Table 6 in Section A.3. Minimum lifetime of the equipment is 20 years. The project is expected to be operational for at least 30 years. Please see project lifetime assessment by Jerri Hydro Expert.	Review-1: Ok Closed (The age and average lifetime of the equipment were indicated in Section A.3 and the relevant evidence document was provided.)
CAR-13 Please indicate the Project's title and sectoral scope in Section A.3 as well.	A.3.13.	Sectoral scope is included in Section A.3.	Review-1: Ok Closed (Project title and the sectoral scope were indicated in Section A.3.)
CAR-14 a) Please indicate the references for the applied methodology and requirements. b) Please indicate the version numbers of the applied	B.1.1.	a) References provided b) Version numbers of requirements is included.	Review-1: a) Ok Closed (The requirements were provided and the relevant references were indicated.)

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Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. To Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
requirements.			b) Ok Closed (The version numbers of the applied requirements were added.)
CAR-15 a) Please provide the version number and the reference of the applied methodology in Section B.2. b) Please give the necessary references in Section B.2 (e.g. WHO/UNICEF Joint Monitoring Programme Core).	B.2.3.	a) Provided. b) The link to the JMP core questions for households is included.	Review-1: a) Ok Closed (The applied methodology and its version were indicated in Section B.2.) b) Ok Closed (The necessary references were indicated in Section B.2.)
CAR-16 It is indicated that, "The project owner may opt to repair the existing pipeline system to supply water the kiosk." Please clarify and correct the same. Also, provide evidence to confirm that the existing technology is non-operational and that there is no planned maintenance or repair for at least 3 months after the date it became non-operational.	B.2.8.	The statement is revised as the project owner decided to repair the existing pipeline system. At the time of writing the PDD, the project owner was evaluating the options. Please see attached the letter "evidence letter from PENWA"	Review-1: Ok Closed (The statement was revised and the evidence document was provided.)
CAR-17 It is indicated that: "The water kiosk will be located within the 1 km walking/ project distance from the of the end-users in households.". Please demonstrate by satellite imaging or GPS coordinates of each CWT or CWS location. Alternatively, as a proxy, a total collection time of 30 minutes or less for a round trip, including queuing, using the travel modes of walking or project may be demonstrated.	B.2.10.	The project boundary is identified as 1 km of each serving point. The coordinates of kiosks are given in Table 4 in Section A.3. Please also see the map given in Figure.15 in Section B.4. for the covered area by the project. A separate report is prepared for the house counting survey named "CAR17_MAJI SAFI MAISHA BORA REPORT".	Review-1: Ok Closed (The map was provided to demonstrate each CWT point in Section A.3.)
CAR-18 It is indicated that: "Water quality test will be performed in accordance with the national standard for drinking water in Kenya." Please clarify with reference to the	B.2.12.	National water quality standards will be followed. The fixed parameter SDWS 3 and the monitoring parameter SDWS 18 are updated and reference is provided. Please see attached File "Responses to	Review-1: Ok Closed (The reference to the exact standard was indicated in Section in Section

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Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. To Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
exact standard.		CARs" for detailed description.	B.6.2.)
<p>CAR-19</p> <p>It is indicated that: "The project staff will conduct annual water hygiene education campaigns for the end-users." Please include in the annex of the PDD, sample WHO/UNICEF Joint Monitoring Programme Core questions for drinking water and hygiene.</p>	B.2.13.	<p>GS has published Household Survey tool for monitoring SWS20 Water hygiene campaigns. The questions in the tool will be used. The tool can be accessed at https://globalgoals.goldstandard.org/429-5-sdws-hs-survey-questionnaires-cws/</p>	<p>Review-1:</p> <p>Ok Closed (The evidence document for the questions were provided.)</p>
<p>CAR-20</p> <p>PDD shall include all the safeguards criteria too including among others documenting the national, regional and local regulatory framework for provision of safe drinking water in the project boundary (parameter SDWS 4). Provide evidence to confirm that the project shall not undermine or conflict with any national, sub-national and local regulations or guidance for safe drinking water supply, operation and maintenance, including any tariff requirements.</p>	B.2.15.	<p>The local regulatory framework is established by Water Act 2016 in Kenya. The project will comply with the act.</p> <p>Compliance with Guidelines on Drinking Water Quality and Effluent Monitoring is a condition of the license granted to the water services board.</p>	<p>Review-1:</p> <p>Ok Closed (The evidence documents were indicated.)</p>
<p>CAR-21</p> <p>Please indicate the maintenance and repair plan for the project activity in Section B.2.</p>	B.2.17.	<p>Section B.2 is revised accordingly. More information about maintenance plan is provided in Section B.7.3 Other elements of monitoring plan.</p>	<p>Review-1:</p> <p>Ok Closed (Maintenance and repair plan was indicated clearly in Section B.7.3.)</p>
<p>CAR-22</p> <p>Please indicate the project boundary following the methodology. Also, the Table presenting the 'Emissions sources included in or excluded from the project boundary' too are to be corrected following the methodology and project context.</p>	B.3.9.	<p>The project boundary includes all infrastructure for water treatment and distribution. No external power is required for the system to operate. All power needed is supplied by solar panels.</p> <p>Review 2:</p> <p>The table format corrected</p>	<p>Review-1:</p> <p>Please correct the format of the table in Section B.3.</p> <p>Review-2:</p> <p>The table format still doesn't seem to</p>

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Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. To Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
		Review 3: Table is revised.	indicate the baseline and project source. Review-3: Ok Closed (The table format was revised accordingly.)
CAR-23 a) Please indicate information of "Kenya Ceramic Jiko" and "Metal Jiko" in Section B.4. b) Please indicate information of existing pump house in Section B.4.	B.4.1.	a) Information about Kenya Ceramic Jiko stove and Metallic Jiko stove are added. The percentage of use for Kenya Ceramic Jiko is taken from Siaya County Integrated Development Plan. b) The information about the pump house is included. It is not operational due to the unpaid energy bills.	Review-1: a) Ok Closed (The information of "Kenya Ceramic Jiko" and "Metal Jiko" is indicated in Section B.4. b) Ok Closed (The information about the existing pump house was indicated in Section B.4.)
CAR-24 Please clarify and indicate the results along with submission of documentary evidence against the following points: Pre-project practices of boiling water or drinking unsafe water (suppressed demand): Document the drinking water sources and/or treatment technologies available and used in the project boundary. Efficiency of water boiling systems: Document the baseline stove or water boiling technologies and technologies' thermal efficiency used in the project boundary. Baseline fuels: Document the baseline cooking fuels used and/or fuels used for water boiling in the project boundary	B.4.21.	The results are calculated from the raw data collected by the baseline survey. Baseline Survey Data_wt Result_v2. xls is revised to refer to the calculations in the raw data. All numbers are calculated from raw data. Please see Section B.4. of the revised PDD. Review 2: Please see the baseline survey questions. The possible answers to 'What is the main source of water the members of your household use for drinking?' are listed and classified as improved and unimproved. Those who answered "No" to the question "Do you have a cookstove?" have been discarded from the results already. 119 respondents who said yes is	Review-1: With regards to the baseline survey, please clarify the veracity of a direct question 'What is the main source of water the members of your household use for drinking?' as in column U and other such questions in the 'maji safi maisha bora' tab and the determination of values thereof. How has the question 'Do you have a cookstove?' interpreted with 'no' as an answer. The derivation of the results of the efficiency of the water boiling systems is unclear and incorrect too. Review-2:

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Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. To Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
		<p>grouped in a separate excel sheet "Cookstove-owners-subgroup". The analysis is then broken down wet season and dry season use.</p> <p>Efficiency of water boiling system for charcoal stoves are calculated as follows: $((\# \text{ Metal charcoal stoves} \times \text{Thermal Efficiency}) + (\# \text{Kenya Jikos} \times \text{Thermal Efficiency})) / \text{Total number of charcoal stoves} = \text{Average Thermal efficiency} = 14\%$ The end-users using both 3 stone fire and charcoal is now assumed that all use charcoal stove. Thermal efficiency of this group is revised as 14% from 12 %.</p>	Ok Closed (Clarified)
<p>CAR-25</p> <p>Please reframe SDG15 target because "by 2020" is not a suitable expression for this project activity.</p>	B.6.1.	This is automatically selected in GS SDG Impact tool and cannot be changed.	<p>Review-1:</p> <p>Ok Closed (The clarification was made.)</p>
<p>CAR-26</p> <p>Please indicate the leakage emission information of the project activity in Section B.6.1.</p>	B.6.1.1.3.	Leakage risks are evaluated in section B6.1 and deemed to be low due the size of the project.	<p>Review-1:</p> <p>Ok Closed (The leakage emission was indicated.)</p>
<p>CAR-27</p> <p>a) There are some missing parameters in Section B.6.2 based on the applied methodology (e.g. <i>TDLe</i>,c). Please also indicate these missing parameters in Section B.6.2.</p> <p>b) Please indicate the necessary references in Section B.6.2 (e.g. WHO, 2017).</p> <p>c) The parameter IDs are missing and so are the corresponding description as relevant and provided in the methodology. For e.g., parameter ID SDWS 1, SDWS</p>	B.6.2.1.	<p>a) Missing parameters related to project emissions have been added. All parameters checked and completed as per the applied methodology.</p> <p>b) References added.</p> <p>c) Parameter IDs are per the applied methodology are inserted.</p> <p>d) Share of each stove as per seasons have been provided.</p> <p>e) Expected life is at least 30 years for the replaced</p>	<p>Review-1:</p> <p>a) Ok Closed (All necessary parameters were added in Section B.6.2.)</p> <p>b) Ok Closed (The references were added.)</p> <p>c) Ok Closed (Parameter IDs were added.)</p> <p>d) Ok Closed (The share of each stove technology was provided.)</p> <p>e) Ok Closed (The evidence document was provided.)</p>

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Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. To Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
<p>4 among others.</p> <p>d) The share of each stove technology being used in the project boundary (SDWS 6) has not been provided.</p> <p>e) Provide evidence for SDWS 7 expected lifetime.</p> <p>f) Please correct the efficiency of the baseline charcoal stove currently indicated as 10%</p> <p>g) The source and value for f_{NRB} are to be updated.</p> <p>h) Please clarify and correct the inconsistent presentation for the parameter QPWp.</p> <p>i) For "Stove technologies used in the project boundary" parameter, please add the cooking technologies "Kenya Ceramic Jiko" and "Metal Jiko" in "Values applied" row.</p>		<p>equipment. Assessment by Jerri Hydro Expert is provided.</p> <p>f) The weighted average of thermal efficiency of charcoal stoves are revised as 14 %.</p> <p>g) The source is updated and a separate calculation sheet is shared. The calculation is revised as per the tool 30 version 3. Please see excel file: fNBR_Kenya_final_31082022. Two calculation methods are presented and the conservative value is chosen.</p> <p>h) The parameter is revised as 4 lt per person per day.</p> <p>i) Additional stove types are added.</p>	<p>f) Ok Closed (The efficiency of the baseline charcoal stove was revised correctly.)</p> <p>g) Ok Closed (The source and the value were updated for f_{NRB} parameter.</p> <p>h) Ok Closed (The unit was revised correctly.)</p> <p>i) Ok Closed (The mentioned cooking technologies were added.)</p>
<p>CAR-28</p> <p>Please provide the relevant SDG indicator for each parameter in Section B.6.2.</p>	B.6.2.3.1.	<p>All parameter fixed ex ante is related with SDG13, indicated in the revised PDD.</p> <p>Review 2: Calculation of efficiency of baseline stoves is explained in the response of CAR 24 and now revised.</p> <p>Review 3: The thermal efficiency of metal charcoal stoves is taken 12% for ex-ante calculations and will be measured by WBT before the first monitoring report.</p>	<p>Review-1: The efficiency of the baseline water boiling devices is to be corrected among other corrections linked to the interpretation of the baseline survey.</p> <p>Review-2: The efficiency of the charcoal stoves cannot be considered as 10% as for the three-stone fire.</p> <p>Review-3: Ok Closed (The clarification was made.)</p>
<p>CAR-29</p> <p>a) In the second table in Section B.6.3, units of Cb,</p>	B.6.3.1.	a) Revised.	Review-1:

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Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. To Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
<p>Xcleanboil,y parameters are stated as "fraction". However, in the "Value" column the values are stated as percentage. Please correct this contradiction.</p> <p>b) Please demonstrate "BE" calculations of SDG13 parameter in Section B.6.3.</p> <p>c) Some parameters given in Section B.6.2 (for SGD 13) are not available in the table stated Section B.6.3 (η_w,b). Please clarify this contradiction.</p> <p>d) Please demonstrate the project emission calculations in Section B.6.3.</p> <p>e) Please clarify and correct the number of days for dry season and wet season. Also, provide corresponding evidence too.</p> <p>f) Please correct the values in the table for SDG 15 and SDG 6 also correcting the baseline and project estimate values.</p>		<p>b) Section B6.3 is revised accordingly</p> <p>c) Missing parameter nbw is explained and included in the calculation.</p> <p>d) Project emissions are expected to be none or minimal as all system is supported by solar power units.</p> <p>e) Wet season and dry season is revised as per the referred source of information.</p> <p>f) Corrected.</p> <p>Review 2:</p> <p>e) Dry season is taken as Jan, Feb, June, Jul and Aug, Sept.</p> <p>Wet season is taken as Mar, Apr, May, Oct, Nov, Dec.</p> <p>The days in wet season is calculated by DATE formula in excel sheet and the system is assumed to be operational for the whole season.</p> <p>The methodology allows 347 days of operation at max and discount 18 days for maintenance. The maintenance is assumed to be undertaken in dry season as the access to the field would be easier in this season. Therefore; the days in dry season is calculated by subtraction wet season days from 347 days of operation.</p>	<p>a) Ok Closed (The values were revised.)</p> <p>b) Ok Closed (BE calculations were added in Section B.6.3.)</p> <p>c) Ok Closed (n_{bw} was indicated in Section B.6.3.)</p> <p>d) Ok Closed (The clarification was added in Section B.6.3.)</p> <p>e) The number of days are still not correct.</p> <p>f) Ok Closed (The values were revised.)</p> <p>Review-2:</p> <p>e) Ok Closed (The clarification was made.)</p>
<p>CAR-30</p> <p>Please indicate the leakage values of SDGs stated in Section B.6.3.</p>	<p>B.6.3.1.3.</p>	<p>Leakage emission are deemed to be negligible due to the nature and size of the project and indicated in section B6.3. Please also see sectionB6.1. for detailed</p>	<p>Review-1:</p> <p>Ok Closed (The clarification was made.)</p>

Draft Report Clarifications, Forward Action and Corrective Action Requests by Validation Team	Ref. To Checklist Questions in Table-1	Summary of Project Developers' Response	Validation Team Conclusion
		explanation.	
CAR-31 Please indicate the baseline emission factor value in Section B.6.3.	B.6.1.1.	Baseline emission (EFb) factor for each season is indicated in the table.	Review-1: Ok Closed (The emission factor values were indicated in the table in Section B.6.3.)
CAR-32 Please revise the baseline estimate values of years 2022 and 2027 for SDG13, SDG15 and SDG6 parameters.	B.6.2.1.	The indicative start date if in 01 December 2023. The tables are updated accordingly.	Review-1: Ok Closed (The baseline estimate values were corrected.)
CAR-33 a) There are some missing parameters in Section B.7.1 based on the applied methodology (e.g. fNRB,f,y, ECp,y). Please also indicate these missing parameters in Section B.7.1. b) Please indicate the purpose of data for each parameter in Section B.7.1. c) Please indicate QA/QC procedures for each parameter in Section B.7.1. d) Please delete the repeated rows of SDG3 in Section B.7.1. e) Please indicate the parameter ID as per the methodology. f) The monitoring parameter for the relevant safeguarding principles 9.5 is also missing, pertaining to the health and safety measures in context of chlorine.	B.7.1.1.	a) fNRB is fixed for the crediting period therefore it is in Section B 6.2. ECp,y is added to Section B 7.1. b) Parameters are revised to include purpose of data c) QA/QC procedures are added. d) Deleted e) Parameter IDs are indicated as per the methodology. f) Added.	Review-1: a) Ok Closed (EC _{p,y} parameter was added in Section 7.1.) b) Ok Closed (Purposes of data were indicated in Section B.7.1.) c) Ok Closed (QA/QC procedures were added.) d) Ok Closed (The repeated rows were deleted.) e) Ok Closed (Parameter IDs were indicated in Section B.7.1) f) Ok Closed ("Transfer of chlorine" parameter was added in Section B.7.1.)
CAR-34 Please indicate the start date of the project activity in the format of DD/MM/YYYY and describe the reason of	C.1.1.1.	Start date is indicative and will be in 01 December 2022.	Review-1: Ok Closed (The expected start date of the project activity is indicated in DD/MM/YYYY

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choosing this date in Section C.1.1.			format.)
CAR-35 Please provide the evidence document for the expected operational lifetime of the project activity.	C.1.2.1.	Please see attached the letter from the water engineer expert Mr. Jeremiah Ouma, CEO of Jerri-Hydro Expert, the company which will perform the infrastructure work for the rehabilitation and upgrade of the Penwa system, as evidence of the expected operational lifetime of the system.	Review-1: Ok Closed (The evidence document was provided.)
CAR-36 Please indicate the start date of the crediting period in the format of DD/MM/YYYY.	C.2.1.1.	The crediting period date is the first date of operation and expected to be 01 December 2023	Review-1: Ok Closed (The crediting period was indicated in DD/MM/YYYY format.)
CAR-37 This is available in Appendix 1 but please indicate the justification for each principle.	D.1.1.	Justification for each principle is summarized in Section D.1 Review 2: Safeguarding principles assessment is revised.	Review-1: Please indicate the "Justification of Relevance" for each principle in Appendix 1. Review-2: Ok Closed (The Appendix 1 has been revised)
CAR-38 Please provide the contact information of Project Participants in Appendix 2 as well (Makohaa, Genius Watter, PENWA).	Appendix 2-1.	Provided.	Review-1: Ok Closed (The contact information of the project participants were added in Appendix 2.)
CAR-39 Please delete the instruction part and Revision History table under Appendix 4, and indicate this section as "N/A".	Appendix 4-1.	Revised.	Review-1: Ok Closed (Appendix 4 was revised.)

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CL-1 Please clarify the status of "Jerry Hydro Expert (JHE)" company.	1.9.	Jerri-Hydro Expert is the company which will perform the infrastructure work for the rehabilitation and upgrade of the Penwa system. He has been added as project proponent.	Review-1: Ok Closed (The clarification was made.)
CL-2 Please provide the Carbon Rights Transfer agreement.	A.1.2.1	The ownership of carbon right has been explained in MoU between and Offgridsun. The agreement is provided.	Review-1: Ok Closed (The MoU agreement was provided.)
CL-3 It is indicated that: "...a water maintenance team will be set up for each point of service covering whole Yimbo region." Please provide evidence to confirm the same.	B.2.7.	Information about maintenance plan is provided in Section B.7.3 Other elements of monitoring plan	Review-1: Ok Closed (The monitoring plan section is revised).
CL-4 The water treatment technology has an adoption rate less than 20% so, the project activity is additional but please indicate the version of Community Services Activity Requirement in Section B.5. Also, the derivation of the value being less than 20% is also to be provided.	B.5.	Section B.5 is revised to demonstrate that the project technology is rare.	Review-1: Ok Closed (Section B.5 was revised.)
CL-5 Please fill in the blanks in the table given in Appendix 3 (or specify them as N/A).	Appendix 3-1.	The project is not a land use project and specified as N/A	Review-1: Ok Closed (Appendix 3 was revised.)
CAR-40 a) The version 2.1 of the Community Services Activity Requirements has been referred in Section A.1.1. However, there is no version 2.1 on the GS4GG website. Please correct the version of the document. b) The statement "2.1.2 CS Projects shall lead to climate change mitigation....." in the Eligibility criteria in Section	ITR	a) Revised as 1.2 b) Revised as per the requirements.	Review-1: a) Ok Closed (The version of the document was revised in Section A.1.1.) b) Ok Closed (The statement was revised in Section A.1.1.)

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A.1.1 shall be corrected to a meaningful statement.			
<p>CAR-41</p> <p>Please revise the statement “Annual emission reduction is estimated to 17,395 tCO₂e by avoiding boiling of more than 64 thousand tons of drinking water. This will sum up to 89,570 tCO₂e during the first crediting period of 5 years.” in Section A.1.</p>	ITR	The statement is revised.	<p>Review-1:</p> <p>Ok Closed (The values were corrected in Section A.1.)</p>
<p>CAR-42</p> <p>For the SDGs, the year has been provided as “Dec 2023”, “2024”, “2025”, “2026”, “2027”, “Dec 2028” in Section B.6.4. The year “Dec 2023” and “Dec 2028” is not clear as whether only one month (December) corresponds to both the year 2023 and 2028. Hence more clarity shall be provided in the PDD and ERs Excelsheet.</p>	ITR	Revised as requested.	<p>Review-1:</p> <p>Ok Closed (The dates were revised in the Excel sheet and in the PDD accordingly.)</p>
<p>CAR-43</p> <p>a) It is mentioned that “A survey for house counting was carried out during 12-26 December 2021 in West Yimbo” in Section B.4. However, the survey dates range from “27/01/2022 – 30/01/2022 in the “Column H” in the “maji safi maisha bora” spreadsheet of baseline survey excelsheet. Please correct the contradiction.</p> <p>b) It is written that “The total population is revised as 18,822 in West Yimbo; that is approximately 4,705 houses each with a household size of 4 persons”, however the population served is “18,820” as per the “Cell E2” of the “Results” spreadsheet in the ERs Excelsheet. Please correct the contradiction.</p>	ITR	<p>a) Revised accordingly.</p> <p>b) Revised as 18,820</p>	<p>Review-1:</p> <p>a) Ok Closed (The dates were revised in Section B.4.)</p> <p>b) Ok Closed (The value was revised in Section B.4.)</p>
CAR-44	ITR	Revised as requested.	Review-1:

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The section details "Section B.5. Demonstration of additionality" is wrongly attached with the "Figure 15. Houses within the West and East Yimbo Wards, covered by all water kiosks" in the PDD. Hence appropriate corrections shall be provided accordingly.			Ok Closed (The title of the section was corrected.)
CAR-45 Please refer to the parameter (Xf : Percentage of fuel f use in target population) in Section B.6.2 of PDD. The values of fuelwood provided for wet season and dry season does not matches with the values provided in the Cell H60, H61, I60, I61 of the Results spreadsheet of the ERs Excelsheet. Please correct the contradiction.	ITR	Wet season and dry season figures are revised accordingly.	Review-1: Ok Closed (The values were revised in Section B.6.2.)
CAR-46 a) The value corresponding to the SDG3 is provided as 100% in Section B.6.4, however the value is 95% as per the Table 1 of the PDD. Similarly the value corresponding to the SDG5 is provided as 100% in Section B.6.4, however the value is 95% as per the Table 1 of the PDD. Correct and consistent values shall be provided throughout the PDD. b) The units corresponding to the SDG impact values shall be provided for the SDGs related table in Section B.6.4 of the PDD. c) The SDG impact value corresponding to the SDG8 shall also be provided in Section B.6.4 of the PDD.	ITR	a)The values are checked and revised. b)Section B6.2 is revised as per the applied methodology. c)The ex-ante estimate for SDG 8 is added.	Review-1: a) Ok Closed (The values were revised in Section B.6.4.) b) Ok Closed (The units were provided in Section B.6.4.) c) Ok Closed (SDG 8 was indicated in Section B.6.4.)
CAR-47 a) The value corresponding to the SDG15 is provided as 7,042 tons in the Table 1 of PDD, while the value is	ITR	a)The values are revised as 7,041.7 b)All values are revised as 64,248.306 as per the ER calculation sheet.	Review-1: a) Ok Closed (The value was revised in Section Table 1 of the PDD.)

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<p>7041.7 tons as per the "Cell F10" of the "SDGs" spreadsheet. Hence the value of 7,042 tons is an overestimated value, which shall be corrected in the PDD.</p> <p>b) The value corresponding to the SDG 6 is 64,267.32 m3 as per the Table 1 of PDD, while the value is 64,248.31 m3 as per the "Cell D17" in the SDGs spreadsheet. Please correct the contradiction.</p>			<p>b) Ok Closed (The value was revised in Table 1 of the PDD.)</p>
<p>CAR-48</p> <p>The scale has been defined as "The project is small-scale based on project scale defined under GS4GG Product Requirements. Annual emission reduction achieved exceeds 10,000 tCO₂e" in Section A.4. As per the GS4GG Product requirements, "project involves technologies such Safe Water Supply, Waste management, etc. not included in Type I or Type II that result in GHG emission reductions not exceeding 60,000 ton CO₂e per year in any year of the crediting period".</p> <p>Hence the justification related to the small scale shall be revised in line with the GS4GG Product requirements.</p>	<p>ITR</p>	<p>Revised as per the requirement.</p>	<p>Review-1: Ok Closed (Section A.4 was revised accordingly.)</p>