VALIDATION REPORT

OFFGRIDSUN S.R.L

CLEAN COOKING TO COMBAT CLIMATE CHANGE IN TANZANIA

IN

UNITED REPUBLIC OF TANZANIA

PROJECT NUMBER: 907

Organizational Unit:	Re Carbon Ltd.		
Project Title:	Clean Cooking to Combat Climate Change in Tanzania		
Project Number:	**Client:**		**Current PDD Version:**
907	Offgridsun S.R.L.		3.6
Date of First Issue:	**Date of Current Version:**	**Version Number:**	**Number of Pages:**
01/02/2023	18/07/2023	3.1	120

Summary:

Host Country: United Republic of Tanzania

Project is Reviewed Against:

☒ Kyoto Protocol ☒ UNFCCC CDM rules and regulations and associated documents

☒ Gold Standard rules and regulations ☐ Other (Please Specify)

Methodology: "AMS-II.G Energy Efficiency Measures in Thermal Applications of Non-renewable Biomass" **Version:** 12.0

Average Annual Emission Reduction Estimate: 11,955 tCO_2e

Project Size: ☐ Large Scale ☒ Small Scale ☐ Micro Scale

Type of Crediting Period:	**Crediting Period Start Date:**
☒Renewable ☐ Fixed	04/03/2023
Project Developers:	Offgridsun S.R.L.

Validation Stages:

☒ Desk Review ☒ Site Visit ☒ Follow-up Interviews

☒ Resolution of Outstanding Issues

Validation Findings: During the validation 34 Corrective Action Requests and 17 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 "Clean Cooking to Combat Climate Change in Tanzania" in United Republic of Tanzania, as described in the PDD, version 3.6, dated 17/07/2023, meets all relevant UNFCCC requirements for the CDM, GS and all relevant host Party criteria and correctly applies the baseline and monitoring methodology AMS-II.G, version 12.0. 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 CİLASUN (Trainee Validator) Mr. Victor GATHOGO (Regional Expert)		☒No distribution without permission of the client or responsible organizational unit
Approved By (Technical Reviewer):	**Name:**	**Signature:**	☐ Limited Distribution
	Rohit BADAYA		☐ Unrestricted Distribution

Abbreviations

CAR : Corrective Action Request
CDM : Clean Development Mechanism
CER : Certified Emission Reduction(s)
CL : Clarification request
CM : Combined Margin
CO_2 : Carbon dioxide
CO_2e : 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
HH : Households
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 CO2 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 "Clean Cooking to Combat Climate Change in Tanzania" in "United Republic of Tanzania" between 02/10/2022 and 28/01/2023. 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. does 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 "Offgridsun S.R.L." to perform the validation of the "Clean Cooking to Combat Climate Change in Tanzania" in United Republic of Tanzania 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 "AMS-II.G Energy Efficiency Measures in Thermal Applications of Non-renewable Biomass", version 12.0
- the project's monitoring plan is assessed against "AMS-II.G Energy Efficiency Measures in Thermal Applications of Non-renewable Biomass", version 12.0
- the project's additionality justification is assessed against the automatic additionality requirements (as per Community Services Activity Requirements (v 1.2) para 4.1.9).
- 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 certified emission reductions (CERs).

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 CERs. 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

"Clean Cooking to Combat Climate Change in Tanzania" is implemented by Offgridsun S.R.L., in collaboration with Mutina Group. The project activity is located in United Republic of Tanzania, Morogoro Region, Kilembero District and Ulanga District, Ifakara and Malinyi Provinces.

For decades, nonrenewable biomass has been Tanzania's primary source of energy. The most regularly used forest product is firewood (around 96% of the households). The estimate of the average demand for wood is 1.39 m3/year/capita while annual sustainable supply is estimated at 0.95 m3/year/capita[1]. Tanzania lost 2.86Mha of tree cover between 2001 and 2021, an 11% decline from 2000, and 972Mt of CO2e emissions[2].

The majority of households in Sub-Saharan Africa (SSA) cook using solid fuel and other polluting fuels such as kerosene, and women in this region spend more than 4 hours of their productive time cooking with such energy sources[3]. Households across the African continent, particularly women, spend up to five hours a day collecting firewood, with a regional average of 2.1 hours[4]. A recent Kenyan research found that rural Kenyans spend an average of 267 minutes (4.45 hours) each day cooking. The study's participants reported saving an hour or less in cooking time by utilizing better cookstoves[5].

With the implementation of the project activity, traditional stoves will be replaced with project stoves that are more efficient, reducing fuelwood and charcoal use and associated carbon emissions. The three stone fire and single walled metal charcoal stoves are the most common traditional cookstoves. Lack of agents in rural distant regions, lengthy distances and bad road conditions, and a lack of finance for small-scale craftsmen are among the factors which cause limited penetration of improved cookstoves.

The improved portable cookstoves (ICS) will be distributed in rural Tanzania. The project seeks to serve a total of 5,000 households in six villages (Man'gula A, Mwaya, Mgudeni, Mtimbira, Malinyi and Sofi Majiji) in Morogoro Region, Ifakara Province, Kilembero District, and Malinyi District.

The cookstoves will be offered at an affordable cost to enable the poorest families to access them.

[1] NAFORMA (2015) at https://www.tfs.go.tz/uploads/NAFORMA_REPORT.pdf

[2] Global Forest Watch, Dashboard, Tanzania (globalforestwatch.org)

[3] https://onlinelibrary.wiley.com/doi/epdf/10.1111/1467-8268.12468

[4] https://www.moderncooking.africa/about-us/

[5] https://www.researchgate.net/publication/341795335

The baseline scenario of the project activity is the anticipated usage of fossil fuels to fulfill thermal energy demands similar to those met by the project devices.

The project is scheduled to begin cookstove sales on 04/03/2023. Therefore, the start date of the project activity is chosen as 04/03/2023 and the start date of the crediting period is chosen as 04/03/2023. 5-year renewable crediting period will be applied to the project activity (i.e. total 15 years). First crediting period of the project is 04/03/2023 – 03/03/2028.

The project will reduce 11,955 tCO_2e each year and 59,773 tCO_2e throughout the five years of the first crediting period.

There are 3 FARs issued during the "Preliminary Review" stage of the project activity:

FAR #1: PD shall supply supporting data for all parameters in time for validation/design review, or allocation may be delayed. This includes and is not limited to: ER spreadsheets, individual study calculations, survey results, study reports etc.

Answer to FAR #1: ER Spreadsheet, Baseline Survey results and WBT test results have been shared with VVB and uploaded to Sustain-cert platform.

FAR #2: PD to clarify how the project meets paragraph 8 of the eligibility criteria of applied methodology and paragraph 3.1.3 of the CSA requirement. The PD shall discuss all listed eligibility criteria in a table format for easy understanding of the reader.

Answer to FAR #2: For the para. 8 of the eligibility criteria of applied methodology**,** the registration of each stove includes assigning a unique serial number and collecting GPS coordinates/ address, and date of installation. The household also receives a registration card with the corresponding serial number. For para. 3.1.3 of the CSA requirement, the project does not apply Suppressed Demand baseline.

FAR #3: The PD has applied default fNRB which was published using 2010 values. PD should update the fNRB calculation using Tool 30 as per the applied methodology requirement using the latest data.

Answer to FAR #3: f_{NRB} value has been updated. The calculation sheet has been provided to the VVB and uploaded to the registry.

There are also 6 CARs issued during the "Preliminary Review" stage of the project activity:

CAR #1: Key Information

CAR #1.1: Estimated SDG impacts does not match the PDD and the SustainCERT App. PD to clarify.

Answer to CAR #1.1: SDG impacts are identified for SDG 1, 3, 5, 8, 13 and 15; which are in line with Sustain-cert application.

CAR #1.2: Please add the full name of the applied methodology in the first page of PDD.

Answer to CAR #1.2: The full name of the applied methodology has been included in the first page of the revised PDD, version 3.5 dated 27/06/2023.

CAR #1.3: PD to upload terms of use to SustainCERT App.

Answer to CAR #1.3: The terms of use has been uploaded to SustainCERT App.

CAR #2: Project design

CAR #2.1: PD shall state that "the project is not registered with any other voluntary or compliance schemes?"

Answer to CAR #2.1: The double counting declaration has been included in Section A.1.1 in the revised PDD, version 3.6, dated 17/07/2023.

CAR #2.2: PD shall confirm that the host country, region, locality or state does not either: Have an emission reduction cap enforced or have the possibility to trade emissions that include the scope of the proposed project.

Answer to CAR #2.2: The host country, Tanzania does not have an emission reduction cap enforced or have the possibility to trade emissions that include the scope of the proposed project.

CAR #2.3: PD shall demonstrate the project's compliance with the applicable Host Country's legal, environmental, ecological, and social regulations.

Answer to CAR #2.3: The project is in compliance with all related legal, environmental, ecological and social regulations. The relevant regulations have been included in Appendix 1.

CAR #2.4: Please state that if any such risk of double counting exists, the project developer has committed to retiring eligible units equal to the quantity of Gold Standard VERs.

Answer to CAR #2.4: If a risk of double counting exists, the project developer commits to retire eligible units equal to the quantity of Gold Standard VERs.

CAR #2.5: Please add the project milestones under section A.1.

Answer to CAR #2.5: The project milestones have been included in Section A.1 of the revised PDD, version 3.6, dated 17/07/2023.

CAR #3: Carbon rights

CAR #3.1: Please provide a sample proof (e.g. carbon waiver form) that end-users are aware of and willing to give up their rights on Products.

Answer to CAR #3.1: A sample carbon agreement signed for the first cookstove has been provided to the VVB.

CAR #4: Start dates

CAR #4.1: Please clarify whether crediting period is renewable or not.

Answer to CAR #4.1: The crediting period is renewable.

CAR #4.2: Start date of the project activity is inconsistent in the PDD and Stakeholder Consultation Report. PD shall check on this inconsistency. Also, the data shall be provided in DD/MM/YYYY format.

Answer to CAR #4.2: The stakeholder consultation report has been revised (v2.1, dated 03/05/2023).

CAR #5: SDG

CAR #5.1: Under SDG 1, each household will save USD 3 m per year. PD to confirm if this is correct.

Answer to CAR #5.1: Total non-renewable wood fuel saved will be multiplied by the price of 10 kg bag sold in the market. For ex-ante calculations, it is assumed to be USD 2.00/ bag; therefore 0.2 USD per kg.

CAR #6: Local Stakeholders Consultation

CAR #6.1: PD shall submit the non-technical summary provided during the LSC meeting. And confirm whether non-technical summary was in the local language.

Answer to CAR #6.1: The non-technical summary has been uploaded to SustainCERT App.

CAR #6.2: The LSC invitation Advert mentions that 2,500 households are targeted by the project, while the PDD mention that 4,750 households will benefit from the project. PD to clarify on the discrepancy.

Answer to CAR #6.2: The number of stoves to be distributed has been increased after the LSC.

CAR #6.3: During consultations, a question was asked if the stove uses only firewood or it uses both firewood and charcoal. The answer provided indicates that the stove can use both fuels. PD to clarify if the stove being promoted uses both fuels and the same stove technology be described in detail in Section A.3 of the PDD.

Answer to CAR #6.3: The cookstove utilizes both fuels.

CAR #6.4: PD to ensure that second round of stakeholders feedback is carried out and evidence of online consultation be availed to VVB during validation. The SFR should be done in line with para 3.6.10 and 3.6.11 of Stakeholder Consultation and Engagement Requirements, Version 2.1.

Answer to CAR #6.4: The stakeholder consultation report has been provided to the VVB. The SFR is carried out between 13.06.2022 and 13.08.2022.

CAR #6.5: Section E.2.: A description of the documents and methods used to seek comments shall be provided in the PDD.

Answer to CAR #6.5: A process book will be placed in chief's office in each village.

CAR #6.6: 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.

Answer to CAR #6.6: Negative safeguards have been discussed during the meeting as per the Stakeholder Consultation Report (v2.1 dated 03/05/2023) and included in the SCR. No negative impact is expected as per the safeguarding principles assessment.

2.4. Parties Involved

Offgridsun S.R.L. is the private entity project participant in the project and host country is United Republic of Tanzania.

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 02/10/2022 and 28/01/2023.
- Assessment whether the applied methodology "AMS-II.G Energy Efficiency Measures in Thermal Applications of Non-renewable Biomass, version 12.0 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 (as per Community Services Activity Requirements(v 1.2) para 4.1.9).
- A physical site visit was conducted between 03/10/2022 – 08/10/2022 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 elebarote 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 20/07/2022 (team change: 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	☒	☒	☒	☒	A, DR, R
Öykü Yakupoğlu	Trainee Validator	☒	☒	☐	☐	A, DR, R
Selen Cilasun	Trainee Validator	☒	☒	☐	☐	A, DR, R
Victor Gathogo	Regional Expert	☒	☐	☐	☐	SV
Rohit Badaya	ITR	☒	☒	☒	☒	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 2.1, dated 03/08/2022 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 3.6, dated 17/07/2023 being the final version. The PDD was assessed against;

- "AMS-II.G Energy Efficiency Measures in Thermal Applications of Non-renewable Biomass, version 12.0
- TOOL21: Demonstration of additionality of small-scale project activities, version 13.1
- TOOL30: Calculation of the fraction of non-renewable biomass, version 04.0
- 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
- Standard for sampling and surveys for CDM project activities and programme of activities, version 09.0
- 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)

As a part of the validation activities a physical site visits were 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	03/10/2022 – 08/10/2022
Location	Kilembero District and Ulanga District

Local Administrators

#	Name	Title	Location/Organisation
1	Michael Chambalo	Village Executive Officer (VEO)	Mwaya Village-Ifakara Town Council
2	Salum Ukiwau Gona	Village Executive Officer (VEO)	Mwaya Village-Ifakara Town Council
3	Deodatus Samwel Kingongota	Village Chairperson	Mgudeni Village
4	Yasitha Vintan Mlembe	Village Executive Officer (VEO)	Mangula "A" Village
5	Abdalah Namwewe	Village Chairman	Mtimbira Village
6	James Kikwesha	VEO	Mtimbira Village
7	Devotha Luvanga	Livestock officer	Mtimbira Village
8	Simtenga Oscar	Acting Township Director	Ifakara Town Council
9	Malisa Gabriel	Township Environmental Management Officer	Ifakara Town Council
10	Yonas Mhedena	chariman	Sifi Majiji

11	Mathiasi Mandim	VEO	Sifi Majiji
12	Ibrahim Mkoroma	VEO	Malinyi Village
13	Gasto S. Silayo	Ag-DED	Malinyi District Council
14	Christine G. Chacha	District Environment Management Officer (DEMO)	Malinyi District Council
Household Verification		**Designation**	**Village**
1	Zuhuru Idi Saidi	Housewife	Mwaya Village
2	Romwald Rafael Ndomba	Husband	Mwaya Village
3	Canisia Mhagama	Child (>18yrs)	Mwaya Village
4	Huruma Saidi Shahame	Housewife	Mwaya Village
5	Farida Hassan Kaisi	Housewife	Mgudeni Village
6	Lilian Stephanie Kazikulima	Housewife	Mgudeni Village
7	Elias Edwad Ligoho	Husband	Mgudeni Village
8	Enele George Mwasimali	Housewife	Minazini- Mangula "A" Village
9	Hamida Libweha	Housewife	Relini- Mangula "A" Village
10	Bibiana Kawaga	Housewife	Shuleni- Mangula "A" Village
11	Hadija Wemba	Housewife	Mtimbira Village- Malinyi
12	Salome Katimba	Housewife	Mtimbira Village- Malinyi
13	Anastacia Nicalaus Filipo	Housewife	Mtimbira Village- Malinyi
14	Kudra S. Mtandiko	Housewife	Mtimbira Village- Malinyi
15	Badwina A. Luselo	Housewife	Mtimbira Village- Malinyi
16	Magdalene Mwashinga	Housewife	Sofi Majiji
17	Jane Benson Lisoso	Housewife	Sofi Majiji
18	Zaidina Ayubu Kenge	Housewife	Sofi Majiji
19	Ashula Hassani Karanji	Housewife	Sofi Majiji
20	Aristida Ananius Lingongo	Housewife	Sofi Majiji
21	Katalina Mtwanga	Housewife	Malinyi Village
22	Christian Joseph Mwanyinga	Housewife	Malinyi Village
23	Tiba Saidi Chihali	Housewife	Malinyi Village
24	Abysamiya Mpangachuma	Husband	Malinyi Village
25	Amida Mahiku	Housewife	Malinyi Village
26	Asumini Simba	Housewife	Malinyi Village
27	AvelinaAtanas Lianjuka	Housewife	Malinyi Village
28	Elinda Daniel Lubambe	Housewife	Malinyi Village
29	Valentina Njoka	Housewife	Malinyi Village
30	Sakina Ismael Lyakwasa	Child (>18yrs)	Malinyi Village
Project Stakeholders			
1	Emma Laswai	Project Manager	TAREA
2	Jacqueline Mtemahanji	Project Manager	Mutina Group
3	Mwambije Sylvester	CEO	Envotec
4	Erick Mwambije	Technical Director	Envotec
5	Thomson Mwambije	Operations Manager	Envotec
6	Salama Soud	Operations	Envotec
7	Mwambije Eberi	Accounts/assistant Operations	Envotec

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

Mangula "A" Village

In Mang'ula "A" village, residents are not allowed to collect firewood from the nearby protected forest reserve. Tanzania National Parks penalises encroachers deterring residents from the forest. In this village, residents use firewood, and charcoal as their primary fuels and some households use liquid petroleum gas (LPG) as a secondary fuel for their cooking needs.

Clay Stoves were the main preferred stove. Previous projects in the village promoted the use of alternative fuels e.g., briquettes made from sugarcane wastes, coconut, and rice husks.

The village officer confirmed women do play the greatest role when it comes to the choice of the stove to be bought and through the VEO's office, the villagers can be sensitized about the project to transition them towards clean cooking.

Three households were sampled in Mangúla "A" village. Out of the 3 households (HH) sampled, 1 HH cooked their meals inside a kitchen while 2 preferred to cook outside. The following are the results of the verification visit. The cooking areas had no chimney and in one kitchen soot was noticed on the roof and walls (see picture below). No stove had a grate. The households had an average of 5 dependants. The HH with the largest number of dependents is seven (7) and the lowest has three (3).

The primary cooking technology in the 3 HH included a portable clay charcoal stove, and three stone open fire stove and in one HH they used a fixed firewood/fuelwood stove. Tertiary cooking technology used rarely was 6kg LPG with a burner and a kerosene stove.

The primary fuel used for cooking and boiling water was firewood, followed by charcoal and in one HH they used kerosene for cooking/boiling requirements.

The common fuel type used in the household's included firewood and charcoal. The HH indicated that they would use up to 2 bags of charcoal a month and up to 80 kilos (bike load) of firewood for their cooking needs. Firewood would last up to 3 months for cooking.

Figure 1. Types of fuels used for cooking

Firewood and charcoal are obtained from vendors who sell the product between Tshs. 35,000-40,000 and Tshs. 15,00 for a bike load of firewood. In some instances, some houses indicated they have private woodlots that they go to fetch firewood. One HH fetches firewood on their farm which is 60KM and they spend 1.5hrs on a motorbike to fetch firewood while one respondent indicated they cover 1km to fetch firewood spending 1 hour to fetch it.

One HH reported no health concern with the rest reporting cases of chest infection leading to persistent coughs and respiratory diseases. The use of wet smoke was blamed for health issues and a kitchen with no chimney.

Mgudeni Village

In Mgudeni village, which exists in the province of Morogoro. The project will target 848 households (Kaya) with the inception targeting 400 households. In the village, 5 promoters and 5 distributors have already been identified and awaiting the project commencement. The local administrators indicated that for their energy needs, the villagers collect firewood from their woodlots or for the production of charcoal, however, population pressure has impacted the resource due to increasing demand for firewood and charcoal. There is no control over the production of charcoal making it easily available for use by households. The local administrators also confirmed being informed about the carbon waiver rights and were ready to sign it off once it is ready. The average number of dependents in the 3 sampled households was seven (7) with the HH with the largest number of dependents being ten (10) and the lowest having 3.

The main types of stove technologies used in the 3 villages included portable clay charcoal and TSOF stoves. None of the stoves had a grate and all the households preferred to cook in a kitchen except in dry seasons when one household would cook in the open.

Figure 2. Images of the various types of cooking technologies encountered

Charcoal was the preferred primary source of energy followed by firewood. The common type of fuel used was charcoal and firewood. 2 HH used firewood while one completely did not rely on the use of firewood but charcoal.

Figure 3. various fuels used to include agro residues on the right indicating rice husks

The households would use 1-2 bunches per day, and it is bought at Tshs. 4000 per bunch. Charcoal was bought in portions (estimated to be up to 1kilo per portion) for Tshs. 3,000. Firewood and charcoal are bought from vendors in the village. Shops do sell charcoal and in the case of firewood, it is sold in bunches or bicycle loads.

Figure 4. fuels used, firewood and charcoal

The sampled HH do not fetch firewood but rely on vendors who sell the commodity in the village, this is because firewood and charcoal are scarce, and the population have no forest resource or woodlots to provide for their energy requirements.

Some of the reported health concerns were teary eyes and eye infections and respiratory diseases e.g., persistent coughs and chest infections.

Mwaya village

Out of the four respondents, 3 HH cooked in the open while one had a kitchen with no chimney. The Households use the following stoves, TSOF and clay charcoal stoves for cooking/boiling. In one of the households, the TSOF while charcoal stoves were potable.

Figure 5. The various types of cooking technologies

Firewood is bought in bunches or bicycle loads. A bunch of costs between Tshs. 1,000-7,000 and charcoal is sold in 20litre tins with each tin sold at Tshs. 4,500. A bag of charcoal retails at Tshs. 45,000 per bag and to refill 6-kilo gas cylinders at Tshs. 25,000.

Firewood collection ranges from 2hrs -48hrs. One HH mentioned it takes them 48hrs to go out with a bike to collect firewood which is later stored for energy supply and takes the household 2 years to use the firewood. In one household they noted the distance covered to go and collect firewood had changed, now they cover 2-3kms to collect firewood.

The households reported health issues like coughing, and chest and eye infection. One household was aware of the risks that come with the use of firewood though no health issue was noted from the use of the fuel.

Mtimbira Village

Out of the five respondents, 4 HH used a clay portable charcoal stove, metallic and 1 HH used a TSOF. All the stoves had no grate and 3 HH cooked in the kitchen however none of the kitchens had a chimney. One HH indicated that they use a firewood stove (TSOF) as their secondary stove.

Figure 6. Various cooking technologies used in the village

The primary fuels were firewood and charcoal while the secondary fuel was gas and agricultural residues e.g., maize cobs and chickpeas stalk.

Figure 7. Various sources of fuel used in the village

The households buy firewood sold in bunches by the vendors. The HH consumption is dependent on the size of the log with small logs lasting 1 week (less than 80kilos) while huge ones (above 80kilos) up to 2 weeks. Firewood is collected in the forests while charcoal is bought from other regions. One bag of charcoal lasts an averagely of one month when used and is bought at an average price of Tshs. 20,000 while one bicycle load of fuel wood is bought at Tshs. 2,500-3000.

While some HH does not fetch firewood, for those who spend time fetching it cover up to 3kilomteres spending 3hrs to collect fuel. Some HH indicated they do not fetch fuel wood but rely on vendors to provide the fuel to their households.

Reported health concerns especially during the wet season due to the practice of cooking indoors chest and eye infections.

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 34 CARs, 17 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	02/10/2022	28/01/2023	119
Review of the PDD version 01	02/10/2022	18/10/2022	17
Site Visit	03/10/2022	08/10/2022	6
Issuance of the Validation Protocol version 01	18/10/2022	18/10/2022	1
Review of PDs Initial Set of Responses	04/01/2023	09/01/2023	6
Issuance of the Validation Protocol version 02	09/01/2023	09/01/2023	1
Review of PDs Second Loop Responses	16/01/2023	16/01/2023	1
Issuance of the Validation Protocol version 03	18/01/2023	18/01/2023	1
Review of PDs Third Loop Responses	23/01/2023	25/01/2023	3
Closing of all the CARs and CLs	25/01/2023	25/01/2023	1
Issuance of the Validation Report version 01	28/01/2023	01/02/2023	5
ITR Process	01/02/2023	15/02/2023	15
Issuance of the Validation Report version 02	15/02/2023	16/02/2023	2
Submission for Final Approval	16/02/2023	17/02/2023	2
Submission to the PD	17/02/2023	17/02/2023	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 Offgridsun S.R.L. This company is in collaboration with Mutina Group.

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

"Clean Cooking to Combat Climate Change in Tanzania" is implemented by Offgridsun S.R.L., in collaboration with Mutina Group. The project activity is located in United Republic of Tanzania, Morogoro Region, Kilembero District and Ulanga District, Ifakara and Malinyi Provinces.

With the implementation of the project activity, traditional stoves will be replaced with project stoves that are more efficient, reducing fuelwood and charcoal use and associated carbon emissions. The three stone fire and single walled metal charcoal stoves are the most common traditional cookstoves.

Figure 8. The various types of cooking technologies

Lack of agents in rural distant regions, lengthy distances and bad road conditions, and a lack of finance for small-scale craftsmen are among the factors which cause limited penetration of improved cookstoves.

Figure 9. Images of the various cooking areas in Mang'ula A village

Firewood and charcoal are obtained from vendors who sell the product between Tshs. 35,000-40,000 and Tshs. 15,00 for a bike load of firewood. In some instances, some houses indicated they have private woodlots that they go to fetch firewood.

Figure 10. Bicycle load and firewood collected for use in the households

The improved portable cookstoves (ICS) will be distributed in rural Tanzania. The project seeks to serve a total of 5,000 households in six villages (Man'gula A, Mwaya, Mgudeni, Mtimbira, Malinyi and Sofi Majiji) in Morogoro Region, Ifakara Province, Kilembero District, and Malinyi District.

The cookstoves will be offered at an affordable cost to enable the poorest families to access them.

The baseline scenario of the project activity is the anticipated usage of fossil fuels to fulfill thermal energy demands similar to those met by the project devices. Fossil fuel emission factor is the emission factor for the substitution of non-renewable woody biomass by similar consumer.

The project is scheduled to begin cookstove sales on 04/03/2023. Therefore, the start date of the project activity is chosen as 04/03/2023 and the start date of the crediting period is chosen as 04/03/2023. 5-year renewable crediting period will be applied to the project activity (i.e. total 15 years). First crediting period of the project is 04/03/2023 – 03/03/2028.

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 "AMS-II.G Energy Efficiency Measures in Thermal Applications of Non-renewable Biomass, version 12.0.

All the GHGs allowed under the applied and applicable "AMS-II.G Energy Efficiency Measures in Thermal Applications of Non-renewable Biomass, version 12.0 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 AMS-II.G (version 12.0), it is assumed that in the absence of the project activity, the baseline scenario would be the projected use of fossil fuels to meet similar thermal energy needs as those provided by the project devices. Fossil fuel emission factor is the emission factor for the substitution of non-renewable woody biomass by similar consumer.

The three-stone fire and single walled metal charcoal stove are the primary stoves employed in "Clean Cooking to Combat Climate Change in Tanzania" project to address household cooking needs[6]. According to a recent research[7] in the Morogoro region, wood fuel meets 93.2% of overall energy demands at households in rural Tanzania. The average household's daily fuel use is 9.9 kg of firewood and 2.8 kg of charcoal.

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.

[6] https://tarea-tz.org/storage/app/media/Blog/ICS%20Assessment%20and%20Testing.pdf

[7] https://www.ajol.info/index.php/tjfnc/article/view/210921

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:

- All installed project cookstoves surpass the 20% thermal efficiency standard, as evidenced by certifications and Water-Boiling-Test results (WBT). Water Boiling Test results are provided by the PD.

- The project's thermal energy savings are less than 180 GWh in any year of the crediting period. The energy savings calculations have been checked and confirmed by the VVB.

- For decades, nonrenewable biomass has been Tanzania's primary source of energy. Firewood is the most widely utilized forest product, with 96% of homes using it solely. The average demand for wood is predicted to be 1.39 m3/year/capita, whereas the yearly sustainable supply is assessed to be 0.95 m3/year/capita. As a result, the yearly supply of wood is insufficient to fulfill the annual demand. Between 1995 and 2010, the annual pace of deforestation was 372,816 hectares. All the reference links are provided in the PDD.

- Each stove is registered by assigning a unique serial number and collecting GPS coordinates/address, as well as the date of installation. A registration card with the accompanying serial number is also given to the household.

4.7. Additionality

The proposed project is located in the Republic of Tanzania which falls under the category of a LDC. Also, the project is additional as per automatic additionality route: “Project activities solely composed of isolated units where the users of the technology/measure are households or communities or institutions and where each unit results in <= 600 MWh of energy savings per year or <=600 tonnes of emission reductions per year.”. The PD provides the justification and the relevant evidence to demonstrate that the project activity complies with this route. Re Carbon Ltd. confirmed with reviewing evidence documents and reference links and conducting on-site visit that each units results in <600 MWh of energy savings per year and <600 tonnes of emission reductions per year. Therefore, as per Community Services Activity Requirements (v 1.2), the proposed project activity is automatically additional.

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:

- $N_{0,j}$: Number of commissioned project devices batch j (the devices grouped in the batches)
- $N_{d,HH}$: Number of project devices distributed per household
- $n_{y,I,j}$: Proportion of commissioned project devices batch j ($N_{0,j}$) that remain operating in year y
- $n_{new,I,j}$: Efficiency of the device of each type i and batch j implemented as part of the project activity
- μ_y: Adjustment to account for any continued use of pre-project devices during the year y
- Life Span: The operating lifetime of the project device
- Date of commissioning batch j
- Total non-renewable fuelwood saved by the use of project cookstoves
- Percentage of households that observed reduction in PM2.5and CO concentration reductions
- Average time saving associated with cooking time and fuel collection
- Total number of jobs created by the project
- Average household savings at cooking due to the use of less fuelwood
- Labour Conditions: All workers will be provided with individual service contracts
- Scrap materials/equipment: Percentage of scrap material recycled
- Promoting tree planting: Number of trainings provided to the distributors and promoters

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.

In the monitoring plan, there are some important points, such as date of installation of cookstoves, efficiency of the devices, sample Plan for the Project Survey and so on. Each component of the monitoring plan will be implemented with assistance from the project developer.

The local partner MUTINA group will create and manage the project database, as well as deploy local employees on the ground to monitor the distribution of the cookstoves. At the

time of sale, carbon right vouchers will collect end-user information, which will be kept in a database controlled by OffgridSun S.R.L. employees. All distributors and promoters will be taught how to register cookstoves in the database.

After three years of usage, MUTINA will determine whether the project stove will be extensively overhauled for ongoing use under the same ID or totally replaced.

Annual/biennial household survey will be performed to collect data related about the use of the stoves. Data will be gathered and kept in an OffgridSun-managed database. MUTINA will support on the ground to collect the data.

The ex-ante estimations of the SDG contributions are as follows:

SDG 15: No fuelwood is saved before the project implementation.

SDG 3: The majority of Tanzanian households cook using open fires or stoves that burn solid fuels, such as charcoal and wood. When solid fuels are used for cooking, a large amount of indoor air pollution occurs.

SDG 5: Women and girls spent daily are 4 hours for cooking and 2.1 hours for collecting fuel in Sub-Saharan Africa.

SDG 8: New income generating activities will be available by the implementation of the project (estimated value is 120).

SDG 1: No fuelwood is saved in the baseline situation.

SDG 13: 2.56 tCO2e for the first year (the detailed information is included in Section 4.9 of this report)

Re Carbon Ltd. can certify that the list of parameters to be monitored is complete and consistent with "AMS-II.G Energy Efficiency Measures in Thermal Applications of Non-renewable Biomass", version 12.0 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 "AMS-II.G Energy Efficiency Measures in Thermal Applications of Non-renewable Biomass", version 12.0.

The share of firewood and charcoal in total household energy is connected with the percentage utilization of each stove[8]:

Fuel Type	Share in total household energy
Fuelwood	70.20%

[8] https://www.ajol.info/index.php/tjfnc/article/view/210921

Charcoal	13.80%

For the “share in cooking energy”:

Fuelwood: 70.20 / (70.20 + 13.80) = 83.6 %

Charcoal: 13.80 / (70.20 + 13.80) = 16.4 %

The share each stove is assumed to be same for each fuel type as per the share in cooking energy. The thermal efficiency of the charcoal stove will be confirmed by WBT before the first issuance.

The approach which calculates the baseline wood fuel usage per household is as follows:

(a) Historical data or a sample survey conducted as per the latest version of the “Standard: Sampling and surveys for CDM project activities and programme of activities”

The daily average usage of firewood and charcoal per family is 9.9 kg and 2.8 kg, respectively. This amount includes all energy needs, such as lighting, cooking, and operating machines. 2019/2020 Energy Access and Use Situation Survey II Report, Table 4.14 states that fuelwood and charcoal constitute 51.3% and 40.4% of the cooking energy in Morogoro region respectively. Annual consumption per household ($B_{old,HH}$) is calculated as follows:

$B_{old,HH}$ = (9.9kg x 0.513) + (2.8 kg x 6 kg fuelwood/kgcharcoal x 0.404) x 365 = **4.33 tons/year**

The baseline fuel usage is verified against comparable projects registered under various carbon programs. The value is 5.9235 tons/year[9]. Therefore, the ex-ante estimate of baseline fuel usage is considered conservative.

$\eta_{new,i,j}$ (efficiency of the device of each type i and batch j implemented as part of the project activity) is calculated with considering the decrease in efficiency as follows (a default schedule of linear decrease in efficiency up to the terminal efficiency assumed as 20 per cent shall be applied through the life span of the project device):

For fuelwood annual decrease= (30.6%-20%)/3= 3.53%

For charcoal annual decrease= (38.5%-20%)/3= 6.16%

The lifespan of the cookstoves is 3. Therefore,

	First Year	Second Year	Third year
Project stove efficiency (fuelwood)	30.6	27.07	23.53
Project stove efficiency (charcoal)	38.50	32.33	26.17
Weighted average	31.25	26.95	22.64

To calculate emission reductions for each stove, the following equation is used:

[9] https://registry.verra.org/app/projectDetail/VCS/2366

$$ER_{y,i,j} = B_{y,savings,i,j} \times N_{0,i,j} \times n_{y,i,j} \times \mu_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\_fossil\ fuel}$$

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

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

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 domestic fuelwood consumption value (fuelwood consumption and charcoal consumption) and non-domestic wood consumption (fuelwood consumption and charcoal consumption) values. As a result, the total woody biomass consumption is found as 35,715,815 t/yr. The amount of the renewable biomass is calculated as follows:

$$Renewable\ Biomass\ (RB) = MAI \times (Total\ forest\ cover - Protected\ area\ cover - Forest\ area\ with\ plantation)$$

For total forest cover, "FAO Global Forest Resources Assessment 2020 Report United Republic of Tanzania" is referred. For year 2019, the total forest cover is 46,214,000 ha. For protected area cover and forest area with plantation, again, the same reference is referred. The value for protected area is 28,508,000 ha and the value for the forest area with plantation is 2,130,000 ha.

To calculate MAI value, these area cover values are used and also, Table 4.9 in 2019 Refinement to the "2006 IPCC Guidelines for National Greenhouse Gas Inventories (Volume 4, Chapter 4)" is used. The MAI value is found as 0.09 t/ha/yr.

As a result, the renewable biomass is calculated as 5,335,256 t/yr. Therefore, the non-renewable biomass is (35,715,815 – 5,335,256) = 30,380,560 t/yr.

Finally, $f_{NRB,y}$ is found as 0.85 as per the above relevant calculation.

$B_{y,savings,I,j}$ is calculated by using the ex-ante parameters $\eta_{old,i,j}$ and $B_{old,I,j}$ and the ex-post parameter $\eta_{new,i,j}$ as follows:

$$B_{y,savings,i,j} = B_{old,i,j} \times (1 - \frac{\eta_{old,i,j}}{\eta_{new,i,j}})$$

$B_{old,i,j}$ is the annual quantity of woody biomass that would have been used in the absence of the project activity to generate thermal energy equivalent to that provided by the project device type i and batch j (tonnes/year). It is calculated as follows:

$$B_{old,i,j} = \frac{B_{old,HH}}{N_{d,HH}}$$

$B_{old,HH}$ is the annual quantity of woody biomass that would have been used in the household in the absence of the project activity to generate thermal energy equivalent to that provided by the project devices. For $B_{old,HH}$ value, "Estimation Of Household Energy Consumption Intensities Around And Within Miombo Woodlands In Morogoro And Songea Districts,

Tanzania (2021)" is referred. The relevant values (Fuelwood per household per day in Rural Tanzania, Charcoal per household per day in Rural Tanzania) are taken from this source to calculate $B_{old,HH}$. Also, "2019/20 Energy Access and Use Situation Survey II Report, Tanzania Mainland" is referred for the percentage of fuelwood use and the percentage of charcoal use. $B_{old,HH}$ is calculated as 4.33 tonnes/household/year.

$N_{d,HH}$ is the number of project devices per household. This is 1. Therefore, $B_{old,i,j}$ is 4.33 tonnes/year.

When the values specified in the PDD are used, $B_{y,savings,i,j}$ is calculated as 2.92 t/y. Then, the emission reductions for each stove can be obtained as 2.69 tCO_2e/y. Mutiplying for leakage emission factor of 0.95, the emission reductions for each stove will be 2.56 tCO_2e/y. This emission reduction is related to the first year of operation. This quantity steadily decreases as the stoves age. The project stoves that have reached the end of their economic life will be replaced by the new project stoves at the end of the third year. Considering the characteristics of the cookstoves, the validation team confirmed that the estimated lifetime of 3 years is appropriate.

$EF_{projected\text{-}fossil\ fuel}$ is the emission factor for the substitution of non-renewable woody biomass by similar consumers. This value is taken 73.2 tCO_2e/TJ with reference to the applied methodology (AMS-II.G, v12.0).

With considering 5,000 households, the total estimated emission reduction value for the first year is 10,731 tCO_2e/y.

$B_{y,savings,i,j}$ for second and third year is calculated with considering the rate of drop of the project stove efficiency (fuelwood and charcoal). Then, the value of $B_{y,savings,i,j}$ of 2nd year is calculated as around 2.69 t/y and the value of $B_{y,savings,i,j}$ of 3rd year is calculated as around 2.39 t/y.

Therefore, the emission reductions of 2nd year is found as 11,973 tCO_2e/y and the emission reductions of 3rd year is found as 10,693 tCO_2e/y. The total estimated emission reduction value for the first crediting period is 59,773 tCO_2e.

Calculations have been reproduced by the VVB and the source data for the ex-ante and ex-post parameters are presented by the PD. These sources are found appropriate by the validation team.

4.10. Environmental Impacts

The project complies with all applicable legal, ethical, social, and environmental requirements.

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.

Further the environmental impacts 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. It is validated based on interviews, on-site audit and expertise of the validation team that safeguarding principles are indicated appropriately.

4.11. Local Stakeholder Comments

In line with the GS requirements, the local stakeholder consultation as per "Stakeholder Consultation Report, v2.1 dated 03/08/2022" was held on 15/02/2022 in Mangula and on 17/02/2022 in Malinyi, Tanzania. The first meeting will be held in Man'gula Village at the Mazingira Onlus Centre from 9.00 AM to 13.00 local time. The second meeting will be held in Malingi Village at the Ukumbi Chuo cha Unesi- Lugala from 9.00 AM to 13.00 local time.

On 23/12/2021, an advertisement for the meeting was published in the local newspaper to invite all interested local communities.

The stakeholders confirmed that the project will generate net SDG benefits and will not jeopardize the principles of sustainability. As a result of the comments received, no changes are anticipated. Larger-sized stoves would need to be manufactured for their usage.

The information about the local stakeholder consultation was validated based on documentary evidence verified by the validation team.

Moreover, on-site interviews with some of the local stakeholders were conducted between 03/10/2022 – 08/10/2022 (both days included) and there had not been any complaint by the interviewed local stakeholders during the interviews held.

4.12. Sampling Plan

To get trustworthy assessment of the proportion or mean value of the important variables listed below across the crediting period, the sampling plan approach is used.

- $n_{y,i,j}$: Proportion of commissioned project devices of type i and batch j ($N_{0,i,j}$) that remain operating in year y (fraction)

- μ_y: Adjustment to account for any continued use of pre-project devices during the year y

- Percentage of households that observed reduction in PM2.5and CO concentration reductions

- Percentage of households with average time saving associated with cooking time and fuel collection

- Total non-renewable fuelwood saved (based on the number of operational stoves)

- Average household savings at cooking (based on the number of operational stoves)

All monitored parameters will be sampled using Simple Random Sampling, with samples selected at random. In each monitoring period, each improved cookstove (ICS) will be assigned a Sample Selection Number ranging from 1 to the entire number of ICS in the Database. The ICS can then be randomly chosen from the defined population up to the required sample size.

Sampling approaches defined in the PDD for $n_{y,i,j}$, μ_y, percentage of households that observed reduction in PM2.5and CO concentration reductions, percentage of households with average time saving associated with cooking time and fuel collection, total non-renewable fuelwood saved (based on the number of operational stoves) and average household savings at cooking (based on the number of operational stoves) parameters are found appropriate by the validation team with considering the applicability of the approaches in the site.

The Household Survey (which comprises a household questionnaire and visual inspection of ICSs) and the registration procedure for newly distributed/installed ICS are the two key data gathering techniques which are appropriate techniques that will be used.

The population size N is taken as 5,000 (i.e., 5,000 households). It is expected at least 95% of ICS is still in operation. Also, it is expected that the users of the project stoves will not continue to use the three stone fire. Then, the sample size is calculated with the proper equations, and it is found as 30. Therefore, at least 30 households will be surveyed.

The methods which will be used for the sampling approach have been found appropriate by the validation team considering the inspections during the on-site visit (between 03/10/2022 – 08/10/2022).

Figure 11. Meeting with local stakeholders

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 amount of time spent collecting fuel wood and cooking will be reduced. Women will have more time for other pursuits. The likelihood of being subjected to gender-based violence will also be reduced.

- Principle 3 (Community Health, Safety and Working Conditions): The cookstoves will be produced by EnvoTec Services Limited. The company follows the requirements in The Occupational Health and Safety Act 2003.

- 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): The project participants will employ all workers in accordance with all applicable national laws. The project participants will not restrict any workers from establishing and joining labour organisations. Work agreements will be done for each employee.

- Principle 7 (Climate and Energy): The project stoves will reduce emissions due to the increased thermal efficiency compared to the baseline stoves. Tree-planting will be promoted during the training done for the distributors and promoters.

- Principle 8 (Water): The project does not use any water. No damage is foreseen to the nature of soil or water bodies.

- Principle 9 (Environment, ecology and land use): No use of land or soil is applicable. The project will provide efficient cookstoves to households. The scrap metal parts will be stored and recycled properly.

As per the above information about the principles, all mandatory requirements have been included in the PDD, version 3.5 dated 27/06/2023.

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 about 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 [10]	Full Name	Title	Organization
I01	SV	Michael Chambalo	Village Executive Officer (VEO)	Mwaya Village-Ifakara Town Council
I02	SV	Salum Ukiwau Gona	Village Executive Officer (VEO)	Mwaya Village-Ifakara Town Council
I03	SV	Deodatus Samwel Kingongota	Village Chairperson	Mgudeni Village
I04	SV	Yasitha Vintan Mlembe	Village Executive Officer (VEO)	Mangula "A" Village
I05	SV	Abdalah Namwewe	Village Chairman	Mtimbira Village
I06	SV	James Kikwesha	VEO	Mtimbira Village
I07	SV	Devotha Luvanga	Livestock officer	Mtimbira Village
I08	SV	Simtenga Oscar	Acting Township Director	Ifakara Town Council
I09	SV	Malisa Gabriel	Township Environmental Management Officer	Ifakara Town Council
I10	SV	Yonas Mhedena	chariman	Sifi Majiji
I11	SV	Mathiasi Mandim	VEO	Sifi Majiji
I12	SV	Ibrahim Mkoroma	VEO	Malinyi Village
I13	SV	Gasto S. Silayo	Ag-DED	Malinyi District Council
I14	SV	Christine G. Chacha	District Environment Management Officer (DEMO)	Malinyi District Council
I15	SV	Zuhuru Idi Saidi	Housewife	Mwaya Village
I16	SV	Romwald Rafael Ndomba	Husband	Mwaya Village
I17	SV	Canisia Mhagama	Child (>18yrs)	Mwaya Village

[10] SV: Site visit; T: Telephone; E: E-mail

Reference Number	Means of Interview [10]	Full Name	Title	Organization
I18	SV	Huruma Saidi Shahame	Housewife	Mwaya Village
I19	SV	Farida Hassan Kaisi	Housewife	Mgudeni Village
I20	SV	Lilian Stephanie Kazikulima	Housewife	Mgudeni Village
I21	SV	Elias Edwad Ligoho	Husband	Mgudeni Village
I22	SV	Enele George Mwasimali	Housewife	Minazini-Mangula "A" Village
I23	SV	Hamida Libweha	Housewife	Relini- Mangula "A" Village
I24	SV	Bibiana Kawaga	Housewife	Shuleni-Mangula "A" Village
I25	SV	Hadija Wemba	Housewife	Mtimbira Village- Malinyi
I26	SV	Salome Katimba	Housewife	Mtimbira Village- Malinyi
I27	SV	Anastacia Nicalaus Filipo	Housewife	Mtimbira Village- Malinyi
I28	SV	Kudra S. Mtandiko	Housewife	Mtimbira Village- Malinyi
I29	SV	Badwina A. Luselo	Housewife	Mtimbira Village- Malinyi
I30	SV	Magdalene Mwashinga	Housewife	Sofi Majiji
I31	SV	Jane Benson Lisoso	Housewife	Sofi Majiji
I32	SV	Zaidina Ayubu Kenge	Housewife	Sofi Majiji
I33	SV	Ashula Hassani Karanji	Housewife	Sofi Majiji
I34	SV	Aristida Ananius Lingongo	Housewife	Sofi Majiji
I35	SV	Katalina Mtwanga	Housewife	Malinyi Village
I36	SV	Christian Joseph Mwanyinga	Housewife	Malinyi Village
I37	SV	Tiba Saidi Chihali	Housewife	Malinyi Village
I38	SV	Abysamiya Mpangachuma	Husband	Malinyi Village

Reference Number	Means of Interview [10]	Full Name	Title	Organization
I39	SV	Amida Mahiku	Housewife	Malinyi Village
I40	SV	Asumini Simba	Housewife	Malinyi Village
I41	SV	AvelinaAtanas Lianjuka	Housewife	Malinyi Village
I42	SV	Elinda Daniel Lubambe	Housewife	Malinyi Village
I43	SV	Valentina Njoka	Housewife	Malinyi Village
I44	SV	Sakina Ismael Lyakwasa	Child (>18yrs)	Malinyi Village
I45	SV	Emma Laswai	Project Manager	TAREA
I46	SV	Jacqueline Mtemahanji	Project Manager	Mutina Group
I47	SV	Mwambije Sylvester	CEO	Envotec
I48	SV	Erick Mwambije	Technical Director	Envotec
I49	SV	Thomson Mwambije	Operations Manager	Envotec
I50	SV	Salama Soud	Operations	Envotec
I51	SV	Mwambije Eberi	Accounts/assistant Operations	Envotec

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	2.1	03/08/2022
D02	PDD	3.0	03/11/2022
D03	PDD	3.1	16/01/2023
D04	PDD	3.2	19/01/2023
D05	ER Calculation Excel Sheet	1.0	03/08/2022
D06	ER Calculation Excel Sheet	2.0	03/11/2022
D07	ER Calculation Excel Sheet	3.0	16/01/2023
D08	KMZ File of the Project Activity	-	-
D09	Stakeholder Consultation Report	2.1	03/05/2023
D10	GS Preliminary Review	-	15/07/2022
D11	Water Boiling Test Results (i.e. Performance Test Results) (for charcoal)	-	02/03/2022
D12	Water Boiling Test Results (i.e. Performance Test Results) (for fuelwood)	-	02/03/2022
D13	Technical Specification Document of Jiko Makini	-	02/12/2022
D14	Envotec Services Limited Company Profile Document	-	-
D15	Photographic Evidence of Jiko Makini stoves	-	-
D16	Energy Access and Use Situation Survey II Report, Tanzania Mainland	-	07/2020
D17	ODA Declaration	-	07/04/2022
D18	Excel sheet for f_{NRB} calculation	1.0	03/11/2022
D19	Excel sheet for f_{NRB} calculation	2.0	16/01/2023
D20	Declaration about Double Counting	-	25/10/2022
D21	Cookstove Purchase Contract	-	07/12/2022
D22	Site Photos	-	-
D23	CDM Validation and Verification Standard for Project Activities	3.0	09/09/2021
D24	CDM Project Standard for Project Activities	3.0	09/09/2021
D25	AMS-II.G Energy Efficiency Measures in Thermal Applications of Non-renewable	12.0	14/12/2020

Document Number	Document Name	Version	Date (dd/mm/yyyy)
	Biomass		
D26	TOOL21: Demonstration of additionality of small-scale project activities	13.1	01/09/2020
D27	TOOL30: Calculation of the fraction of non-renewable biomass	04.0	08/09/2022
D28	PDD	3.3	10/02/2023
D29	ER Calculation Excel Sheet	4.0	10/02/2023
D30	Revised MoU	-	23/01/2023
D31	SDG Impact Tool	01	14/02/2023
D32	PDD	3.4	08/05/2023
D33	WBT Test results about Efficiency of the device of each type (firewood and charcoal)	-	-
D34	Standard for sampling and surveys for CDM project activities and programme of activities	09.0	27/05/2021
D35	ER Calculation Excel Sheet	4.1	08/05/2023
D36	Community Services Activity Requirements	1.2	10/2019
D37	GS4GG Principles and Requirements	1.2	10/2019
D38	SDG Impact Tool	02	08/05/2023
D39	End User Contract Template	-	-
D40	Excel sheet for f_{NRB} calculation	3.0	18/05/2023
D41	PDD	3.5	27/06/2023
D42	ER Calculation Excel Sheet	4.3	27/06/2023
D43	Excel sheet for f_{NRB} calculation	4.0	27/06/2023
D44	PDD	3.6	17/07/2023

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, ITR and a TA 1.1, 1.2, 2.1, 3.1, 13.1, 13.2 expert. Rohit is also a Regional Expert for Bhutan, Brazil, Cambodia, Chile, Democratic Republic of Congo, Egypt, El Salvador, Ethiopia, The Gambia, India, Indonesia, Iran, Kenya, Madagascar, Malawi, Mauritius, Mexico, Morocco, Myanmar, Nepal, Nicaragua, Nigeria, Papua New Guinea (PNG), Republic of Madagascar, Senegal, South Africa, Sri Lanka, Thailand, Türkiye, Uganda, Vietnam and Zambia.

Ms. Selen CİLASUN holds a B.Sc. and a M.Sc. Degree in "Bioengineering". With re-carbon, Selen is an internal Validator/Verifier Trainee, a TA 1.2 expert and a Regional Expert for Türkiye.

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, ITR and a TA 1.1, 1.2, 2.1, 3.1, 4.1, 9.1, 9.2, 13.1, 13.2 & 15.1 expert. Sandeep is also

a Regional Expert for China, India, Indonesia Mexico, Nepal, Philippines, Tanzania, Thailand, Türkiye and Vietnam.

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 01: 2015 - Environment Management System Internal Auditor and an ISO 50001: 2018-Energy Management System Internal Auditor. With re-carbon, Öykü is an internal Team Leader, a Regional Expert for Türkiye, a TA 1.2 expert. Öykü is a TA 1.1, 2.1, 3.1, 13.1 and 15.1 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

Verified Carbon Standard
A VERRA STANDARD

SECTORAL 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	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021
	TA 1.2: Renewables	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021
SS 02: Energy distribution	TA 2.2: Energy distribution	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021
SS 03: Energy demand	TA 3.2: Energy demand	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021
SS 13: Waste handling and disposal	TA 13.2: Solid waste and wastewater	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021
	TA 13.3: Manure	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021	25.10.2021
SS 15: Agriculture	TA 15.1: Agriculture															

GCC

ICR International Carbon Registry

BioCarbon Registry

SECTORAL 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 2.2: Energy distribution	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022										
SS 03: Energy demand	TA 3.2: Energy demand	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022										
SS 13: Waste handling and disposal	TA 13.2: Solid waste and wastewater	07.07.2022	07.07.2022	07.07.2022	07.07.2022	07.07.2022										
	TA 13.3: 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 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 **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:

SECTORAL 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: Renewables															
SS 02: Energy distribution	TA 2.1: Energy distribution															
SS 03: Energy demand	TA 3.1: Energy demand															
SS 10: Waste handling and disposal	TA 10.2: Solid waste and wastewater															
	TA 10.3: Manure															
SS 15: Agriculture	TA 15.1: Agriculture															

SECTORAL 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: Renewables															
SS 02: Energy distribution	TA 2.1: Energy distribution															
SS 03: Energy demand	TA 3.1: Energy demand															
SS 10: Waste handling and disposal	TA 10.2: Solid waste and wastewater															
	TA 10.3: 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

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. Sandeep Kanda

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

SECTORAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS 01: Energy industries	TA 1.1: Thermal energy generation					
	TA 1.2: Renewables					
SS 02: Energy distribution	TA 2.1: Energy distribution					
SS 03: Energy demand	TA 3.1: Energy demand					
SS 10: Waste handling and disposal	TA 10.2: Solid waste and wastewater					
	TA 13.2: Manure					
SS 15: Agriculture	TA 15.1: Agriculture					

SECTORAL SCOPE	TECHNICAL AREA	VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT
SS 01: Energy industries	TA 1.1: Thermal energy generation					
	TA 1.2: Renewables					
SS 02: Energy distribution	TA 2.1: Energy distribution					
SS 03: Energy demand	TA 3.1: Energy demand					
SS 10: Waste handling and disposal	TA 10.2: Solid waste and wastewater					
	TA 13.2: Manure					
SS 15: Agriculture	TA 15.1: Agriculture					

SECTORAL SCOPE	TECHNICAL AREA	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					
SS 02: Energy distribution	TA 2.1: Energy distribution					
SS 03: Energy demand	TA 3.1: Energy demand					
SS 10: Waste handling and disposal	TA 10.2: Solid waste and wastewater					
	TA 13.2: Manure					
SS 15: Agriculture	TA 15.1: Agriculture					

VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT

VERIFIER	VALIDATOR	TEAM LEADER	ITR	EXPERT

COUNTRY EXPERTISE: China, India, Indonesia, Mexico, Nepal, Philippines, Tanzania, Thailand, Türkiye, Vietnam

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

Ms. Öykü Yakupoğlu

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

SECTORAL 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: Renewables						30.06.2022	30.06.2022			30.06.2022	30.06.2022	30.06.2022			30.06.2022
SS 02: Energy distribution	TA 2.1: Energy distribution															
SS 03: Energy demand	TA 3.1: Energy demand															
SS 10: Waste handling and disposal	TA 10.2: Solid waste and wastewater															
	TA 10.3: Manure															
SS 15: Agriculture	TA 15.1: Agriculture															

SECTORAL 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: Renewables	30.06.2022	30.06.2022			30.06.2022										
SS 02: Energy distribution	TA 2.1: Energy distribution															
SS 03: Energy demand	TA 3.1: Energy demand															
SS 10: Waste handling and disposal	TA 10.2: Solid waste and wastewater															
	TA 10.3: Manure															
SS 15: Agriculture	TA 15.1: Agriculture															

COUNTRY EXPERTISE: Turkey

8. VALIDATION OPINION

Re Carbon Ltd. performed the validation of the "Clean Cooking to Combat Climate Change in Tanzania" in "United Republic of Tanzania" between 02/10/2022 and 28/01/2023. 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.

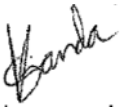
The validation was performed by a validation team consisting of "Sandeep Kanda as the team leader, Öykü Yakupoğlu as the trainee validator, Selen Cilasun as the trainee validator, Victor Gathogo as the regional expert and Rohit Badaya as the ITR" and the project activity was checked against the applicable 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 "Clean Cooking to Combat Climate Change in Tanzania" in United Republic of Tanzania, 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 average of 11,955 tCO_2e per annum over the selected 5 years 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 "Clean Cooking to Combat Climate Change in Tanzania" in United Republic of Tanzania, as described in the PDD version 3.6 dated 17/07/2023.

- 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 "AMS-II.G Energy Efficiency Measures in Thermal Applications of Non-renewable Biomass", version 12.0
- 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 18/07/2023	Rohit BADAYA ITR 18/07/2023	Esin TUNALI Certification Manager 18/07/2023

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 page 2 of the PDD.	CAR-1	OK
1.1. GS ID of the project activity	GS-PDD-FORM Ver. 1.2	DR	This is available as “11659”.	OK	OK
1.2. Title of the project activity	GS-PDD-FORM Ver. 1.2	DR	This is available as “Clean Cooking to Combat Climate Change in Tanzania”.	OK	OK
1.3. Time of first submission date	GS-PDD-FORM Ver. 1.2	DR	This is available as “05/05/2022”.	OK	OK
1.4. Date of design certification	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
1.5. Version number of the PDD	GS-PDD-FORM Ver. 1.2	DR	This is available as “2.1” for the first submission.	OK	OK
1.6. Completion date of version	GS-PDD-FORM Ver. 1.2	DR	This is available as “03/08/2022” 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 as specified in the Gold Standard Impact Registry on the cover page and in the Appendix 2 of the PDD.	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	The participants are available as "Tanzania Renewable Energy Association (TAREA)" and "Mutina Group".	OK	OK
1.10. Host country (ies)	GS-PDD-FORM Ver. 1.2	DR	This is available as "Tanzania".	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 "AMS-II.G (V12.0) Energy efficiency measures in thermal applications of non-renewable biomass".	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	The estimated sustainable development contributions are provided in the relevant tabular format. However, please clarify and correct the unit of contribution for SDG 15.	CAR-3	OK

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

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	Traditional stoves will be replaced with the project stoves which will reduce fuel use and the associated carbon emissions.	OK	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	The baseline scenario was described in Section B.4 of the PDD. However, a) The provided reference (NAFORMA 2015) in Section B.4 is an old reference. Please provide a more up-to-date reference. b) There is no population value (related to clean cooking) for 2019 in the graph given in Section B.4. Please check. c) Please provide the names of 6 villages which are mentioned in Section A.1 ("The project aims at reaching a total number of 5,000 households living in 6 villages located in Morogoro Region.")	CAR-4	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 provide an estimation of annual average and total GHG emission reductions for the chosen crediting period in Section A.1 of the PDD.	CAR-5	OK
4. Is the 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 was described clearly. Please indicate the necessary references as footnotes for all information in Section A.1 (some links are missing, some links cannot be opened). Please indicate the dates as DD/MM/YYYY format in Table 1 in Section A.1.	CAR-6	OK
A.1.1. Eligibility of the project under Gold Standard					

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
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	The justifications of the eligibility criteria were explained but please a) Indicate the expressions marked in yellow highlight as unmarked (on page 8 of the PDD). b) Provide the ODA declaration. c) Remove the incorrect information "The project is located in Siaya County of Kenya and the project boundary and scale are defined based on the GS Methodology: Emission Reductions from Safe Drinking Water Supply" on page 10 of the PD. d) In 3.1.4 (a) related to "The eligibility criteria identified in Community Services Activity Requirements", please indicate if end-user information (e.g. name, contact information and so on) is to be specified while registering.	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 Purchase Agreement.	CL-1	OK
A.2. Location of the project activity					
A.2.1. Is the location of the project activity clearly identified including:	GS-PDD-FORM	DR	Please indicate the host party and city of the project activity and the closest settlement to it in Section A.2.	CAR-8	OK

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

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Ver. 1.2				
A.2.1.1. Host Party(ies)?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-8.	CAR-8	OK
A.2.1.2. Region/State/Province etc.	GS-PDD-FORM Ver. 1.2	DR	This is available as “Morogoro Region”.	OK	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	This was provided.	OK	OK
A.2.1.6. Details of physical location, including information allowing the unique identification of the 54roject activity (e.g. geographic coordinates).	GS-PDD-FORM Ver. 1.2	DR	The KMZ document of the project activity was provided but please indicate the project coordinates in Section A.2 of the PDD.	CAR-9	OK
A.3. Technologies and/or measures					
A.3.1. Does PDD include the accurate and complete description of the proposed project activity and provide an understanding of the proposed GS project activity?	CDM Project Standard for Project activities §35	DR	a) Please provide the photos of Jiko Makini stoves (real ones). b) Please indicate the estimated life time of the project stoves in Section A.3 of the PDD and provide the evidence document for this. c) Please provide the references for World Bank,2016 and UNIDO 2019.	CAR-10	OK

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

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
			d) Please specify who the manufacturer of the stoves is in Section A.3.		
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 project activity will produce new stoves.	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	By the implementation of the project, traditional stoves will be replaced with the project stoves.	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 Project activities §51	DR	By the implementation of the project, traditional stoves will be replaced with the project stoves.	OK	OK
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	They are described.	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
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	They are provided.	OK	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-4.	CAR-4	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	The explanation is available.	OK	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 PDD?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §36e-iv	DR	Please see CAR-10.	CAR-10	OK
A.3.10. Is the information provided as to how the project contributes positively to three SDGs?	GS-PDD-FORM Ver. 1.2	DR	These are available 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	DR	N/A	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
	Ver. 1.2				
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-11	OK
A.3.13.1. Project's title	CDM Project Standard for Project activities §36a	DR	Please see CAR-11.	CAR-11	OK
A.3.13.2. Project's sectoral scope	CDM Project Standard for Project activities §36b	DR	Please see CAR-11.	CAR-11	OK
A.3.13.3. Know-how to be used are transferred to the host Party(ies)	CDM Project Standard for Project	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
	activities §36h				
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	This 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	Please provide the evidence for this information stated in Section A.5.: “The funding for the production of stoves will be provided by the producer organization that will be legal owner of the VERs.”	CL-2	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 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?	GS-PDD-FORM Ver. 1.2 CDM Project Standard for Project activities §38	DR	N/A	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. 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 tools. It is also to be noted that the methodology version has been updated and 'Requests for registration can be submitted until 05 May 2023 23:59:59 GMT' if version 12.0 of AMS.II.G is used. b) Please indicate the sectoral scope for the project activity in Section B.1.	CAR-12	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-12.	CAR-12	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 §55 CDM Validation and	DR	Please see CAR-4.	CAR-4	OK

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

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	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	Please see CAR-4.	CAR-4	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	Please see CAR-4.	CAR-4	OK
AMS-II.G					
B.2.4. Does the proposed project activity comprises efficiency improvements in thermal applications of non-renewable biomass. Examples of applicable technologies and measures include the introduction of high efficiency biomass fired project devices (cookstoves or ovens or dryers) to replace the existing devices and/or energy efficiency improvements in existing biomass fired cookstoves or ovens or dryers? (AMS II.G. is **not applicable** to Greenfield applications)	AMS II.G. Version 12.0 §2	DR	These are all available in the PDD. By the implementation of the project, traditional stoves will be replaced with the project stoves.	OK	OK
B.2.5. Does the project involves cookstoves, if so	AMS II.G.	DR	The justification is available in Section B.2: "All installed	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
is the introduction of single pot or multi pot portable or in-situ cookstoves with rated efficiency of at least 20 per cent?	Version 12.0 §3		cookstoves exceed the limit of 20% thermal efficiency; which will be proven by certificates and results of Water-Boiling-Test (WBT)"		
B.2.6. Is the certificate issued by third party or test results for the cookstove efficiency submitted?	AMS II.G. Version 12.0 §3	DR	Please provide Water-Boiling-Test (WBT) results and indicate who prepares this test in Section B.2 of the PDD.	CL-3	OK
B.2.7. The aggregate energy savings of a single project activity shall not exceed the equivalent of 60 GWh per year or 180 GWh thermal per year in fuel input.	AMS II.G. Version 12.0 §4	DR	The thermal energy savings of the project is below 180 GWh in any year of the crediting period based on the energy saving calculation.	OK	OK
B.2.8. Has non-renewable biomass been used in the project region since 31 December 1989, established using survey methods or referring to published literature, official reports or statistics?	AMS II.G. Version 12.0 §5	DR	The justification is available (Non-renewable biomass has been the main source of energy for decades in Tanzania.) but please see CAR-4.	CAR-4	OK
B.2.9. For cases where the biomass is sourced from renewable sources, the project participants should use a corresponding Type I methodology.	AMS II.G. Version 12.0 §6	DR	N/A	OK	OK
B.2.10. Does the PDD explain the proposed method for distribution of project devices including the method to avoid double counting of emission reductions such as unique identifications of product and end-user locations (e.g. programme logo)?	AMS II.G. Version 12.0 §7	DR	The justification is available in Section B.2: "The registration of each stove includes assigning a unique serial number and collecting GPS coordinates/ address, and date of installation. The household also receives a registration card with the corresponding serial number."	OK	OK
B.2.11. Does the PDD also explain how the proposed procedures prevent double counting of emission reductions, for example to avoid that project stove manufacturers, wholesale providers or others claim credit for emission reductions from the project devices?	AMS II.G. Version 12.0 §8	DR	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.	CL-4	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
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 project boundary, physically delineating the project activity, based on the description provided in section A.3 of the PDD?	GS-PDD-FORM Ver. 1.2	DR	N/A	OK	OK
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	CDM	DR	All sources were included.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
within the project boundary?	Validation and Verification Standard for Project activities§69				
B.3.7. Does the PDD correctly describe the project boundary and the physical delineation of the proposed project activity?	CDM Project Standard for Project activities §57	DR	Please see CAR-9.	CAR-9	OK
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	The selected methodology was applied correctly.	OK	OK
AMS-II.G					
B.3.9. The project boundary is the physical, geographical site of the efficient devices that utilize biomass	AMS II.G. Version 12.0 §15	DR	Please see CAR-9	CAR-9	OK
B.4. Establishment and description of the baseline scenario					
B.4.1. Does the approved methodology that is	CDM	DR	Please also see CAR-4.	CAR-4	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
• selected by the proposed GS project prescribe the baseline scenario and hence no further analysis is required?	Validation and Verification Standard for Project activities §94 CDM Project Standard for Project activities §59				
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?	CDM Validation and Verification Standard for Project activities §75 CDM Project Standard for Project activities §61	DR	Please see CAR-4.	CAR-4	OK
B.4.3. If the methodology requires use of the tools to identify the baseline scenario, have all those been applied?	CDM Validation and Verification Standard for Project	DR	Please see CAR-4.	CAR-4	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	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	Please see CAR-4.	CAR-4	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	Please see CAR-4.	CAR-4	OK
B.4.6. Are there relevant circumstances to identify the baseline scenario?	CDM Validation and Verification Standard for	DR	Please see CAR-4.	CAR-4	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	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
B.4.10. If the alternative scenarios for each of them be identified separately, are the realistic	CDM TOOL01	DR	N/A	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
combinations of these be considered as possible alternative scenarios to the proposed project activity?	Tool for the demonstration and assessment of additionality				
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 activities §93b	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.4.11.3. 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	Please see CAR-4.	CAR-4	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	Please see CAR-4.	CAR-4	OK
B.4.15. Is the identified baseline scenario reasonably supported by correct and verifiable references, assumptions, calculations and ratinonales?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-4.	CAR-4	OK
B.4.16. Has a transparent description of the baseline scenario been provided including the technology(ies) that would be employed and/or the activities that would	GS-PDD-FORM Ver. 1.2 CDM	DR	Please see CAR-4.	CAR-4	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
take place in the absence of the project activity?	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	Please see CAR-4.	CAR-4	OK
AMS-II.G					
B.4.18. Is the baseline scenario the projected use of fossil fuels to meet similar thermal energy needs as those provided by the project devices?	AMS II.G. Version 12.0 §23	DR	The baseline scenario is the projected use of fossil fuels.	OK	OK
B.5. Demonstration of additionality					
• 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	GS-PDD-FORM Ver. 1.2 CDM TOOL01 Tool for the demonstration and	DR	a) Please delete the instruction part in Section B.5. b) Please indicate the version of Community Services Activity Requirement in Section B.5.	CAR-13	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
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 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.)	assessment of additionality				
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

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Question		Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
AMS-II.G						
B.5.1.5.	For the specific case of this methodology, additionality is demonstrated using which one of the options1/2/3?	AMS II.G. Version 12.0 §16	DR	Option 2: The proposed project is located in the Republic of Tanzania which falls under the category of a LDC (deemed additional).	OK	OK
B.5.1.6.	If Option 1 (Positive list) is chosen: Demonstrate ex ante that the penetration of high efficiency biomass fired devices (e.g. energy efficient cookstoves) is equal to or less than 5 per cent of the technologies/measures providing similar services in the region in order to be considered as automatically additional.	AMS II.G. Version 12.0 §17	DR	N/A	OK	OK
B.5.1.7.	The penetration shall be determined using one of the following options: (a) Official statistics or reports, relevant industry association reports or peer-reviewed literature; (b) Results of a sampling survey conducted by project participants or a third party as per the latest version of "Standard: Sampling and surveys for CDM project activities and programme of activities" covering technologies/measures providing similar services as the project technology/measure;	AMS II.G. Version 12.0 §18	DR	N/A	OK	OK
B.5.1.8.	The region/applicable geographical area to determine the penetration should be the entire host country. If the project	AMS II.G. Version 12.0	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
participants opt to limit the applicable geographical area to a specific geographical area (such as province, region, etc.) within the host country, then they shall provide justification on the essential distinction between the identified specific geographical area and rest of the host country.	§19				
B.5.1.9. To determine the penetration using the above paragraph, the most recent data available at the time of submission of the CDM-PDD or CDM-CPA-DD for validation/inclusion, shall be used, and the data vintage used shall not include data older than three years prior to: (a) the start date of the CDM project activity; or (b) the start of validation/inclusion, whichever is earlier.	AMS II.G. Version 12.0 §20	DR	N/A	OK	OK
B.5.1.10. If Option 2 is chosen: Demonstrate additionality by applying the "TOOL21: Demonstration of additionality of SSC project activities".	AMS II.G. Version 12.0 §21	DR	This option was applied correctly.	OK	OK
B.5.1.11. If Option 3 is chosen: Demonstrate additionality by applying the "TOOL19: Demonstration of additionality of microscale project activities".	AMS II.G. Version 12.0 §22	DR	N/A	OK	OK
B.6. Sustainable Development Goals (SDG) outcomes					
Has the PDs specified the relevant SDG target for each of	GS-PDD-FORM	DR	SDG 1, 3, 5, 8, 13, 15 addressed by the project was	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
three SDGs addressed by the 73roject?	Ver. 1.2		specified.		
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	This is available.	OK	OK
B.6.1.1.4. Net benefit	GS-PDD-FORM Ver. 1.2	DR	Please update “EB 67 – Annex 22” reference for fraction of woody biomass parameter throughout the PDD.	CAR-14	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 were 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	DR	Please see below.		

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	activities §72				
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	N/A	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	GS-PDD-FORM Ver. 1.2	DR	The parameters are available in Section B.6.2.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
period under section B.6.3 of the PDD?					
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 were 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-15	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-FORM Ver. 1.2	DR	Please correct the description and value of $n_{old,i,j}$ parameter, also taking into account the presence of other improved stoves and value for charcoal stoves too.	CAR-16	OK
B.6.2.3.5. Source of data	GS-PDD-FORM Ver. 1.2	DR	Please update "EB 67 – Annex 22" reference for fraction of woody biomass fNRB parameter throughout the PDD. The cited source has expired and the fNRB value is to be using one of the two options as follows: (a) Conduct local studies to determine the local fNRB value (sub national values) as per the "TOOL30: Calculation of the fraction of non-renewable biomass"; or (b) Use default national values approved by the Board.	CAR-17	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
			Please see CAR-14.		
B.6.2.3.6. Values applied to data/parameter	GS-PDD-FORM Ver. 1.2	DR	a) Please provide the evidence document for the value applied of $B_{old,HH}$. Also, provide the cross-check method of $B_{old,HH}$ parameter in Section B.6.2. b) Please correct the value applied of $n_{old,l,j}$ parameter for charcoal based on the applied methodology. Also, the presence of other improved stoves is also to be taken into consideration while determining the efficiency of the baseline system being replaced in Baseline Scenario.	CAR-18	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	Please see CAR-18.	CAR-18	OK
B.6.2.4.2. The standards used	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-18.	CAR-18	OK
B.6.2.4.3. Responsible person/entity having undertaken the measurement	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-18.	CAR-18	OK
B.6.2.4.4. The date of measurement(s)	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-18.	CAR-18	OK
B.6.2.4.5. The frequency of measurement(s)	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-18.	CAR-18	OK
B.6.2.4.6. The measurement results	GS-PDD-	DR	Please see CAR-18.	CAR-18	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.6.2.5. 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	This is available.	OK	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	a) Some parameters given in the Table (for SDG 13) in Section B.6.3 are not available in Section B.6.2 ($EF_{projected}$_fossilfuel). Please clarify this contradiction. b) Please give an example for SDG15 contribution in Section B.6.3 (e.g. with taking $N_{0,j}$=1). c) Please correct $B_{old,HH}$ unit throughout the PDD. Please also see CAR-12.	CAR-19	OK
B.6.3.1.1. project outcome	CDM Project Standard for	DR	Please see CAR-19.	CAR-19	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Project activities §71 CDM Validation and Verification Standard for Project activities §110				
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-19.	CAR-19	OK
B.6.3.1.3. leakage	CDM Project Standard for Project activities §71 CDM Validation and Verification Standard for Project activities	DR	Please see CAR-19.	CAR-19	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	§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-19.	CAR-19	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-19.	CAR-19	OK
B.6.3.4. Has the PDs used the estimates contained in the table in section B.6 of the PDD 79roject data/parameters not available before registration and monitored during the crediting period?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-19.	CAR-19	OK
B.6.3.5. If any of these estimates has been determined by a sampling approach,	GS-PDD-FORM	DR	N/A	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
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"?	Ver. 1.2				
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-19.	CAR-19	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-19.	CAR-19	OK
AMS-II.G					
B.6.3.10. Are emission reductionss calculated using equation (1) and (2) given in the	AMS II.G. Version 12.0	DR	The emission reduction was calculated appropriately.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
methodology?	§24				
B.6.3.11. Is the emission factor of the fossil fuels projected to be used to substitute non-renewable woody biomass by similar consumers, either the default regional values provided in table 2 of the methodology or applying equation (3) of the methodology?	AMS II.G. Version 12.0 §25, 26	DR	This is available.	OK	OK
B.6.3.12. Is the fraction of non renewable biomass (fNRB) fixed ex nate or would be determined ex post?	AMS II.G. Version 12.0 §27	DR	Please see CAR-15.	CAR-15	OK
B.6.3.13. How are the biomass savings computed using the options provided in the methodology?	AMS II.G. Version 12.0 §28	DR	The calculation was applied correctly.	OK	OK
B.6.3.14. Are the biomass savings computed following option 1 (Thermal Energy Output (TEO)) applying equation (4) and (5) of the methodology?	AMS II.G. Version 12.0 §29, 30	DR	N/A	OK	OK
B.6.3.15. Are the biomass savings computed following option 2 (Kitchen Performance Test (KPT)) applying equation (6) of the methodology?	AMS II.G. Version 12.0 §31	DR	N/A	OK	OK
B.6.3.16. Are the biomass savings computed following option 3 (Water Boiling Test (WBT)) applying equation (7) or (8) of the methodology?	AMS II.G. Version 12.0 §32	DR	Option 3 was used.	OK	OK
B.6.3.17. Are the biomass savings computed following option 4 (Controlled Cooking Test (CCT)) applying equation (9) of the methodology?	AMS II.G. Version 12.0 §33	DR	N/A	OK	OK
B.6.3.18. Does the calculation account for more than one device per household?	AMS II.G. Version 12.0 §34	DR	The calculation account for one device per household.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.3.19. If the baseline or project fuel is charcoal, is the quantity of woody biomass determined by using a default wood to charcoal conversion factor of 6 kg of firewood (wet basis) per kg of charcoal (dry basis credible conversion factor) or based on credible local conversion factor?	AMS II.G. Version 12.0 §35	DR	Please clarify about the charcoal conversion factor if applied for baseline or project fuel.	CL-5	OK
B.6.3.20. Is the lifetime of each type pf project device documented in the PDD based on manufacturer's specification?	AMS II.G. Version 12.0 §36	DR	This is available.	OK	OK
B.6.3.21. Is it indicated as to how the loss in efficiency of the project devices I in each batch j due to aging shall be accounted during the monitoring period?	AMS II.G. Version 12.0 §37	DR	Option (a) was selected: "A default schedule of linear decrease in efficiency up to the terminal efficiency assumed as 20 per cent shall be applied through the life span of the project device".	OK	OK
B.6.3.22. Is it indicated as to how leakage related to the non-renewable woody biomass saved by the project activity shall be assessed?	AMS II.G. Version 12.0 §41	DR	This is available in Section B.6.1.	OK	OK
B.6.3.23. Project activities switching from baseline device using firewood to efficient project device using charcoal or switching from firewood to efficient project device using processed biomass (briquette, pellets, and woodchips) shall take into account the leakage effects related to the charcoal or processed biomass production.	AMS II.G. Version 12.0 §42	DR	This is available in Section B.6.1.	OK	OK
B.6.1. Summary of the ex-ante estimates of each SDG impact					

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.6.1.1. 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	a) Please indicate the values in the tables given in Section B.6.4 in the "Baseline Estimate" columns not in the "Project Estimate" columns. b) Please indicate the units of the values in the tables given in Section B.6.4 for each SDG parameter. c) Because Option (a) was selected for "the loss in efficiency of the project devices", the value 14,569 for SDG 13 parameter should decrease linearly in Section B.6.4. d) Please indicate the number of stoves for SDG15 parameter.	CAR-20	OK
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	a) Please provide Source of Data for each parameter in Section B.7.1 (not just expressing it as monitoring) b) Please provide the purpose, QA/QC procedures and measurement method (as relevant) for each parameter in Section B.7.1. c) The parameter related to monitoring the efficiency of the project stoves and the number of project devices distributed per household are missing in Section B.7.1. d) Please provide evidence for the lifespan of the project stoves. e) μ_y parameter was placed on both the ex-ante section (B.6.3) and monitoring section (B.7.1.). Also, in the ex-ante section the value applied was taken as 1, in the monitoring section the value applied was taken as 0.95. Please clarify these contradictions. f) Please clarify if the project device commissioning would be done in batches or individual stove and correspondingly	CAR-21	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
			the monitoring too. g) Please provide the evidence document for the value applied of SDG3 in Section B.7.1. h) Please indicate that the value determined as 0.5 hours for SDG5 parameter is daily in Section B.7.1.		
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-21.	CAR-21	OK
B.7.1.3. Has the unit of each data/parameter been included?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-21.	CAR-21	OK
B.7.1.4. Has the description of each data/parameter been included?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-21.	CAR-21	OK
B.7.1.5. Has the source of each data/parameter been included?	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-21.	CAR-21	OK
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-21.	CAR-21	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-21.	CAR-21	OK
B.7.1.8. Has the measurement methods and procedures been included?)	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-21.	CAR-21	OK
B.7.1.9. Has the PDs included which measurement equipment is used for	GS-PDD-FORM	DR	Please see CAR-21.	CAR-21	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
monitoring?	Ver. 1.2				
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.7.1.11. Has the accuracy level of the measurement method included?	CDM Project Standard for Project activities §81b		N/A	OK	OK
B.7.1.12. Has the responsible person/entity for the measurements included?	GS-PDD-FORM Ver. 1.2		N/A	OK	OK
B.7.1.13. Has the interval for the measurements included?	GS-PDD-FORM Ver. 1.2		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	This is available.	OK	OK
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-21.	CAR-21	OK
B.7.1.16. Has the purpose of data/parameter	GS-PDD-	DR	Please see below.		

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
been chosen as one of the following for each data/parameter?	FORM Ver. 1.2				
B.7.1.16.1. Calculation of baseline outcome;	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-21.	CAR-21	OK
B.7.1.16.2. Calculation of project outcome;	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-21.	CAR-21	OK
B.7.1.16.3. Calculation of leakage.	GS-PDD-FORM Ver. 1.2	DR	Please see CAR-21.	CAR-21	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 Project activities §117	DR	Please see CAR-21.	CAR-21	OK
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	DR	Please see CAR-21.	CAR-21	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	ACM 0002 Version 20.0				
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-21.	CAR-21	OK
AMS-II.G					
B.7.1.20. Are the following parameters defined in section B.7.1 of the PDD:	AMS II.G. Version 12.0	DR	Please see CAR-21.	CAR-21	OK
B.7.1.20.1. $N_{0,I,j}$ (Number of commissioned project devices of type i and batch j)	AMS II.G. Version 12.0	DR	Yes, included	OK	OK
B.7.1.20.2. $\eta_{y,i,j}$ (Proportion of commisioned project devices of type i and batch j ($N_{0,I,j}$) that remain operating in year y	AMS II.G. Version 12.0	DR	Yes, included	OK	OK
B.7.1.20.3. μ_y (Adjustment to account for any continued use of pre-project devices during the year y)	AMS II.G. Version 12.0	DR	Yes, included	OK	OK
B.7.1.20.4. $t_{y,i,j}$ (Number of hours of utilization of the device during the year y)	AMS II.G. Version 12.0	DR	Not applicable as Option 1: Thermal Energy Output (TEO) is not followed, rather Option 3: water boiling test (WBT) is chosen.	OK	OK
B.7.1.20.5. $\eta_{new,i,j}$ (Efficiency of the device of each type i and batch j implemented as part of the project activity)	AMS II.G. Version 12.0	DR	Please see CAR-21.	CAR-21	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
B.7.1.20.6. $NCV_{biomass}$ (Net calorific value of the non-renewable woody biomass, briquettes or charcoal used in project devices)	AMS II.G. Version 12.0	DR	This parameter is fixed ex-ante as 0.0156 TJ/tonne corresponding to the IPCC default for wood fuel.	OK	OK
B.7.1.20.7. $SC_{new,i,j}$ (Specific fuel consumption or fuel consumption rate during year y of the device(s) of type i)	AMS II.G. Version 12.0	DR	Not applicable as Option 4: controlled cooking test (CCT) is not followed, rather Option 3: water boiling test (WBT) is chosen.	OK	OK
B.7.1.20.8. $f_{NRB,y}$ (Fraction of woody biomass saved by the project activity during year y that can be established as non-renewable biomass)	AMS II.G. Version 12.0	DR	This parameter is fixed ex-ante, however, is with reference to expired source. Please refer to CAR-15	CAR-15	OK
B.7.1.20.9. $B_{y=1,new,i,j,survey}$ (Quantity of woody biomass used by project devices in tonnes per device of type i)	AMS II.G. Version 12.0	DR	Not applicable as equation 7 under Option 3: water boiling test (WBT) is chosen.	OK	OK
B.7.1.20.10. $B_{new,KPT,i,j}$ (Annual quantity of woody biomass used in tonnes per project device of type i)	AMS II.G. Version 12.0	DR	Not applicable as Option 2: kitchen performance test (KPT) is not followed, rather Option 3: water boiling test (WBT) is chosen.	OK	OK
B.7.1.20.11. Life span	AMS II.G. Version 12.0	DR	Please see CAR-21.	CAR-21	OK
B.7.1.20.12. Date of commissioning of batch j	AMS II.G. Version 12.0	DR	Yes, included	OK	OK
B.7.1.20.13. Date of commissioning of project device i	AMS II.G. Version 12.0	DR	Please see CAR-21.	CAR-21	OK
B.7.1.20.14. $N_{d,HH}$ (Number of project devices distributed per household)	AMS II.G. Version 12.0	DR	Please see CAR-21.	CAR-21	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 89roject activities §29e CDM Guideline: Sampling and surveys for CDM 89roject activities and programmes of activities	DR	Please provide the table number on page 37 of the PDD.	CL-6	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 90roject 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 90roject activities and programmes of activities §40a-l	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 90roject activities	DR	The requirements agree with the appropriate standards.	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
	and programmes of activities §40a-l				
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	Noting that the project is stated to comprise of 5000 ICS distribution, please clarify and correct the following statement in section B.7.2 of the PDD 'Project Developer envisages that a total of 2,500 ICSs will be distributed in Tanzania in the first year of operation. Hence, population size, N, is taken as 2,500 households/ICS (Assuming one ICS for one household).'	CAR-22	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	As per the applied methodology, 'Efficiency of devices may be monitored in a common survey with other monitoring parameters; therefore, a random sub-sample within the common survey can be taken for which stove efficiency is tested, as long as the required precision for stove efficiency is achieved.'. However, in the PDD the sampling approach is not indicated for the efficiency of the project stoves.	CAR-23	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

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

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 for the project 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
	Project 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 Project 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 Project activities and programmes of activities §40f-l	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 Project 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 Project 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 Project activities and programmes of activities §40g-l	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

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

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 Project activities and programmes of activities §40h-l				
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 project emission reductions and any leakage generated by the Project activity?	GS-PDD-FORM Ver. 1.2 CDM Project standard for Project activities §82a	DR	Please indicate the operational and management structure for the monitoring activities, clearly indicated the responsibilities and institutional arrangements for data collection and archiving.	CAR-24	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 Project standard for Project activities §82c	DR	Please see CAR-24.	CAR-24	OK
C. Duration and crediting period					
C.1. Duration of project					

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

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
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 96roject standard for 96roject activities §85	DR	This is available as "01/12/2022".	OK	OK
C.1.1.2. Has the PD described how this date has been determined?	GS-PDD-FORM Ver. 1.2 CDM 96roject standard for 96roject activities §85	DR	This is available.	OK	OK
C.1.1.3. Has the PD provided evidence to support this date?	GS-PDD-FORM Ver. 1.2 CDM 96roject standard for 96roject activities	DR	This is an estimation date for distribution of the project stoves.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	§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 Project standard for Project activities §86	DR	Please provide the evidence document for the expected operational lifetime of the project activity.	CL-7	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	This is available as “01/12/2022”.	OK	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 Project standard for Project activities §89	DR	The one start date was determined.	OK	OK
C.2.1.3. Has the PDs used any qualifications to the start date, such as “expected”?	CDM Project standard for Project activities §90	DR	The date is expected.	OK	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
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 available as "5 years, renewable twice".	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.	OK	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	For Principle 3, it is stated as "potentially". However, no mitigation is indicated. Please indicate the mitigation measure for this principle.	CL-8	OK
D.1.5. Is proper justification for the safeguarding principle indicated?	GS-PDD-FORM Ver. 1.2	DR	Please see CL-8.	CL-8	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
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
E. Summary of Local Stakeholder Consultation					

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

Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
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", version 2.1.	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 Project standard for Project activities §94	DR	This is available in "Stakeholder Consultation Report", version 2.1.	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", version 2.1.	OK	OK
E.1.5. Has the PDs described the proposed project in a manner that allows the stakeholders to understand the project activity, taking into account confidentiality provisions of the applicable CDM M&Ps and requirements?	CDM Project standard for Project activities §101	DR	This is available in "Stakeholder Consultation Report", version 2.1.	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
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", version 2.1.	OK	OK
E.1.7. Has the PD provided a summary of the stakeholder comments in a complete and clear manner?	CDM Project standard for Project activities §105 CDM validation and verification standard for project activities §132f	DR	This is available in "Stakeholder Consultation Report", version 2.1.	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", version 2.1.	OK	OK
E.1.9. Is the process on how the PDs taken into account of all comments received described in the PDD?	CDM Project standard for Project activities §107 CDM validation and verification standard for	DR	This is available in "Stakeholder Consultation Report", version 2.1.	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
	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					
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	DR	This is the validation process (Regular Cycle). Therefore, there is no FAR.	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
	§36				
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 CL-9.	CL-9	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	N/A	OK	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 CL-8.	CL-8	OK
Appendix-2 Contact information of 103roject participants					
9. Is the contact information of PPs provided in Appendix 2?	GS-PDD-FORM	DR	Please give the necessary contact information about TAREA and Mutina Group in Appendix 2.	CL-9	OK

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Question	Reference	Means of Validation*	Findings, Comments, References and Document Sources	Draft Opinion	Final Opinion
	Ver. 1.2				
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-10	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”.	CL-11	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 page 2 of the PDD.	1	Deleted.	Review-1: Ok Closed (The instruction part was deleted.)
CAR-2 Please indicate the full name of the project developer as specified in the Gold Standard Impact Registry on the cover page and in the Appendix 2 of the PDD.	1.7	Project developer's name revised.	Review-1: Ok Closed (The full name of the project developer was indicated on the cover page.)
CAR-3 The estimated sustainable development contributions are provided in the relevant tabular format. However, please clarify and correct the unit of contribution for SDG 15.	2	Revised as tonnes/yr	Review-1: Ok Closed (The unit of SDG15 was revised in Table 1.)
CAR-4 The baseline scenario was described in Section B.4 of the PDD. However, a) The provided reference (NAFORMA 2015) in Section B.4 is an old reference. Please provide a more up-to-date reference. b) There is no population value (related to clean cooking) for 2019 in the graph given in Section B.4. Please check. c) Please provide the names of 6 villages which are mentioned in Section A.1 ("The project aims at reaching a total number of 5,000 households living in 6 villages located in Morogoro Region.")	A.1.2	a) A more recent source of information provided for the use of firewood in rural Tanzania. The report is not available online and attached separately. b) Graph is revised. c) Section A.2 is revised to include village names, project map and coordinates. Review-1: a)Statement is revised.	Review-1: a) Please revise the year in the statement "Only 4% of the population has been reported to have access to clean cooking services in 2019" since in the relevant reference document, the value is related to year 2020. b) Ok Closed (The graph was revised.) c) Ok Closed (The relevant information was provided in Section A.2.) Review-2: a) Ok Closed (The statement was revised in Section B.4.)

* 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
CAR-5 Please provide an estimation of annual average and total GHG emission reductions for the chosen crediting period in Section A.1 of the PDD.	A.1.3	An estimation of annual average and total emission reduction during the first crediting period is stated in Section A.1. Review-1 Total emissions is revised as 63,898	Review-1: In "Cell E10" in "SDGs" spreadsheet, the total emission reduction is stated as "63,898 tCO2e". However, in Section A.1, it is indicated as "63,900 tCO2e". Please correct this contradiction. Review-2: Ok Closed (The value was revised in Section A.1.)
CAR-6 The purpose of the project activity was described clearly. Please indicate the necessary references as footnotes for all information in Section A.1 (some links are missing, some links cannot be opened). Please indicate the dates as DD/MM/YYYY format in Table 1 in Section A.1.	A.1.4	The links are provided and checked in Section A.1. No activities has started for the project at the time of this report writing. All dates are indicative.	Review-1: Ok Closed (The references were corrected in Section A.1.)
CAR-7 The justifications of the eligibility criteria were explained but please a) Indicate the expressions marked in yellow highlight as unmarked (on page 8 of the PDD). b) Provide the ODA declaration. c) Remove the incorrect information "The project is located in Siaya County of Kenya and the project boundary and scale are defined based on the GS Methodology: Emission Reductions from Safe Drinking	A.1.1.1	a) Revised b) ODA declaration is provided. c)Deleted d) Each cookstove will be registered with the name, contact details and address of the end-user. 3.1.4(a) is revised accordingly.	Review-1: a) Ok Closed (The expressions were revised.) b) Ok Closed (ODA Declaration was provided.) c) Ok Closed (The irrelevant information was deleted.) d) Ok Closed (The information was added in Section A.1.1.)

* 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
Water Supply" on page 10 of the PD. d) In 3.1.4 (a) related to "The eligibility criteria identified in Community Services Activity Requirements", please indicate if end-user information (e.g. name, contact information and so on) is to be specified while registering.			
CAR-8 Please indicate the host party and city of the project activity and the closest settlement to it in Section A.2.	A.2.1	Section A.2. is revised accordingly. Review 1: Country is indicated.	Review-1: Please indicate the host country in Section A.2. Review-2: Ok Closed (The host country was indicated in Section A.2.)
CAR-9 The KMZ document of the project activity was provided but please indicate the project coordinates in Section A.2 of the PDD.	A.2.1.6	Section A.2. is revised to include the nearest centers in the project location.	Review-1: Ok Closed (The project coordinates were indicated in Section A.2.)
CAR-10 a) Please provide the photos of Jiko Makini stoves (real ones). b) Please indicate the estimated life time of the project stoves in Section A.3 of the PDD and provide the evidence document for this. c) Please provide the references for World Bank,2016 and UNIDO 2019. d) Please specify who the manufacturer of the stoves is in Section A.3.	A.3.1	a) Please see attached to this document some pictures of the Jiko Makini b) The expected life time of the cookstoves is 3 years as indicated by the manufacturer. Please see the evidence document. c) References provided d) The manufacturer is the Tanzanian company Envotec Services Limited, legally registered in Tanzania, which has experience in the production of cookstoves. Attached to this document the company profile. Information is added to Section A.3.	Review-1: a) Ok Closed (The photographic evidences of Jiko Makini stoves were provided.) b) Ok Closed (The expected lifetime of the cookstoves was indicated in Section A.3 and the relevant evidence document was provided.) c) Ok Closed (The references were provided.) d) Ok Closed (The manufacturer was indicated in Section A.3.)

* 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
CAR-11 Please indicate the Project's title and sectoral scope in Section A.3 as well.	A.3.13	Sectoral scope and title indicated in Section A.3	Review-1: Ok Closed (The title and the sectoral scope were indicated in Section A.3.)
CAR-12 a) Please indicate the references for the applied methodology and tools. It is also to be noted that the methodology version has been updated and 'Requests for registration can be submitted until 05 May 2023 23:59:59 GMT' if version 12.0 of AMS.II.G is used. b) Please indicate the sectoral scope for the project activity in Section B.1.	B.1.1	a) References to the methodologies and applicable tools are provided. b) Sectoral scope indicated in Section B.1. Review 1: a)links are revised accordingly.	Review-1: a) Please revise the reference link of the applied methodology since the link cannot be opened. Also, please apply the latest version of Tool 30. b) Ok Closed (The sectoral scope was indicated in Section B.1.) Review-2: a) Ok Closed (The reference link was corrected and the latest version of Tool 30 was applied.)
CAR-13 a) Please delete the instruction part in Section B.5. b) Please indicate the version of Community Services Activity Requirement in Section B.5.	B.5	a) Deleted b) CSA v 1.2 is indicated in Section B.5 Review 1: Deleted.	Review-1: a) Please delete the empty box in Section B.5. b) Ok Closed (The version was indicated.) Review-2: a) Ok Closed (The empty box was deleted in Section B.5.)
CAR-14 Please update "EB 67 – Annex 22" reference for fraction of woody biomass parameter throughout the PDD.	B.6.1.1.4	References are updated as CDM Tool 30 for the calculation of fnrb.	Review-1: Ok Closed (The reference was updated.)

* 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
CAR-15 Please provide the relevant SDG indicator for each parameter in Section B.6.2.	B.6.2.3.1	Relevant SDG indicator have been indicated for each parameter in Section B 6.2.	Review-1: Ok Closed (The relevant SDG parameters were indicated for each parameter in Section B.6.2.)
CAR-16 Please correct the description and value of $n_{old,i,j}$ parameter, also taking into account the presence of other improved stoves and value for charcoal stoves too.	B.6.2.3.4	The project stoves will be sold to the end-users who currently use either 3 stone fire or single wallet metal charcoal stove. This is indicated in carbon emission waiver agreement. Therefore, improved stoves are not counted in the baseline. The parameter $n_{old,i,j}$ is revised to include traditional charcoal stoves.	Review-1: Ok Closed (The values of $n_{old,i,j}$ were revised in Section B.6.2.)
CAR-17 Please update "EB 67 – Annex 22" reference for fraction of woody biomass fNRB parameter throughout the PDD. The cited source has expired and the fNRB value is to be using one of the two options as follows: (a) Conduct local studies to determine the local fNRB value (sub national values) as per the "TOOL30: Calculation of the fraction of non-renewable biomass"; or (b) Use default national values approved by the Board.	B.6.2.3.5	fNRB is calculated as per CDM Tool 30, the references to EB 67 have been revised. Review 1: fNRB calculation is provided.	Review-1: Please provide the calculation of f_{NRB} in the Excel sheet. Review-2: Ok Closed (The calculation of $f_{NRB,y}$ was provided in the Excel sheet.)
CAR-18 a) Please provide the evidence document for the value applied of $B_{old,HH}$. Also, provide the cross-check method of $B_{old,HH}$ parameter in Section B.6.2. b) Please correct the value applied of $n_{old,l,j}$ parameter for charcoal based on the applied methodology. Also, the presence of other improved stoves is also to be taken into consideration while determining the efficiency of the baseline system being replaced in	B.6.2.3.6	a) The value is cross-checked with a similar project in Tanzania: VCS 2676 Up-Energy Social and Climate Impact Programme, baseline survey carried out showed that annual woody biomass consumption is 5.95 ton/year/hh (https://registry.verra.org/app/projectDetail/VCS/2676) Explanation added to the parameter. b) The project stoves will be sold to the end-users who	Review-1: a) Please indicate the reference link of source of data of $B_{old,HH}$ parameter in Section B.6.2. b) Ok Closed (The values of $n_{old,i,j}$ were revised in Section B.6.2.) 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
Baseline Scenario.		currently use either 3 stone fire or single wallet metal charcoal stove. This is indicated in carbon emission waiver agreement. The parameter $n_{old,i,j}$ is revised to include traditional charcoal stoves. Review-1: The reference link for the referred article is added.	a) Ok Closed (The reference link was added in Section B.6.2.)
CAR-19 a) Some parameters given in the Table (for SDG 13) in Section B.6.3 are not available in Section B.6.2 ($EF_{projected_}$fossilfuel). Please clarify this contradiction. b) Please give an example for SDG15 contribution in Section B.6.3 (e.g. with taking $N_{0,j}$=1). c) Please correct $B_{old,HH}$ unit throughout the PDD.	B.6.3.1	a) Section B 6.2 are revised to include L- leakage factor and $EF_{projected\_fossil\ fuel.}$ b) An example for the first eyar of operation is given in Section B 6.3. c) Revised as tonnes/household/year Review 1. Revised as annual average over the crediting period. Review-2: The value is calculated as per the declining fuelwood consumption due to the decreased efficiency of cookstoves. The calculation has been demonstrated in ER calculation sheet, SDGs tab and included in Section B6.3.	Review-1: a) Ok Closed (Sections B.6.2 and B.6.3 were revised accordingly.) b) Please correct the value for SDG 15 sample calculation in Section B.6.3 (i.e. each stove will save 2.480 tonnes of fuelwood annually on average). c) Ok Closed (The unit of $B_{old,HH}$ was revised.) Review-2: b) "$B_{y,saving,\ i}$, X $N_{0,j}$ x f_{NRB}" calculation does not equal to 2.48 tonnes if N=1 (each stove). Please check and correct the calculation again in Section B.6.3. Review-3: b) Ok Closed (Section B.6.3 was revised accordingly.)
CAR-20	B.6.1.1	a) Values are revised to include baseline estimate and	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
a) Please indicate the values in the tables given in Section B.6.4 in the "Baseline Estimate" columns not in the "Project Estimate" columns. b) Please indicate the units of the values in the tables given in Section B.6.4 for each SDG parameter. c) Because Option (a) was selected for "the loss in efficiency of the project devices", the value 14,569 for SDG 13 parameter should decrease linearly in Section B.6.4. d) Please indicate the number of stoves for SDG15 parameter.		project estimates for SDG 13 and SDG 15 b) The units are indicated in each table. c) The linear decrease on emission reduction is applied and the ERs revised. Please see revised ER calculation Sheet. d) Total number of project stoves operational is taken as 4,750 due to the estimated usage rate of 0.95. It is indicated in Section B6.4. Review 1: a)Section B6.4 is revised. b)The cookstoves that have completed their economic life at the end of third year will be replaced by the new ones. That is the reason the ERs in the first year is the same as the fourth year. An explanation is added to the section B 6.3. Review-2: The net benefit ERs are declining through the lifespan of the cooktoves.	a) Please indicate "Annual average over the crediting period" values for the project estimate and the net benefit as well in Section B.6.4. b) Ok Closed (The units were indicated in Section B.6.4.) c) The values do not decrease linearly in the Excel sheet and in Section B.6.4. Please check and correct the net benefit values for SDG 13. d) Ok Closed (The number of stoves was indicated in Section B.6.4.) Review-2: a) Ok Closed (The values were indicated in Section B.6.4.) c) If their economic life will be completed at the end of third year, then for year 2025, the related values (for SDG 13 and SDG 15) should be lower in Section B.6.4. Please check and correct the values in Section B.6.4 and in the "SDGs" spreadsheet. Review-3: c) Ok Closed (The clarification was made.)
CAR-21 a) Please provide Source of Data for each parameter in Section B.7.1 (not just expressing it as monitoring)	B.7.1.1	a) Source of data are indicated as usage survey for parameters that were indicated as "monitoring" in Section 7.1. b) QA/QC procedures are included for each parameter	Review-1: a) Ok Closed (The clarification was made.) b) Ok Closed (QA/QC procedures were indicated for each parameter 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
b) Please provide QA/QC procedures for each parameter in Section B.7.1. c) Please provide the purpose for each parameter in Section B.7.1. d) Please provide the measurement methods for each parameter in Section B.7.1. e) μ_y parameter was placed on both the ex-ante section (B.6.3) and monitoring section (B.7.1.). Also, in the ex-ante section the value applied was taken as 1, in the monitoring section the value applied was taken as 0.95. Please clarify these contradictions. f) Please provide the evidence document for the value applied of SDG3 in Section B.7.1. g) Please indicate that the value determined as 0.5 hours for SDG5 parameter is daily in Section B.7.1.		in Section B 7.1. c) Purpose of each parameter have been provided. d) Measurement methods are provide for each parameter in Section B.7.1 e) The project targets that all households will drop out the traditional cooking equipment and the parameter is assumed to be 1 in ex-ante calculations. It is now revised in Section B.7.1 as well. f) The value is calculated based on the assumption that 95% of the stoves would be operational and continuous users will experience reduction in indoor air pollution. It is revised as percentage of users experiencing reduction in indoor pollution. g) Indicated Review 1: c)Purpose the data is added.	B.7.1.) c) Please indicate the purpose of data for "Number of households that observed reduction in PM2.5and CO concentration" parameter in Section B.7.1. d) Ok Closed (The measurement methods were indicated for each parameter in Section B.7.1.) e) Ok Closed (The value was revised in Section B.7.1.) f) Ok Closed (The clarification was made.) g) Ok Closed (SDG 5 parameter was revised accordingly in Section B.7.1.) Review-2: c) Ok Closed (The purpose of the data was indicated in Section B.7.1.)
CAR-22 Noting that the project is stated to comprise of 5000 ICS distribution, please clarify and correct the following statement in section B.7.2 of the PDD 'Project Developer envisages that a total of 2,500 ICSs will be distributed in Tanzania in the first year of operation. Hence, population size, N, is taken as 2,500 households/ICS (Assuming one ICS for one household).'	B.7.2.6	The statement corrected as 5,000 stoves.	Review-1: Ok Closed (The statement was revised in Section B.7.2)

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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
CAR-23 As per the applied methodology, 'Efficiency of devices may be monitored in a common survey with other monitoring parameters; therefore, a random sub-sample within the common survey can be taken for which stove efficiency is tested, as long as the required precision for stove efficiency is achieved.'. However, in the PDD the sampling approach is not indicated for the efficiency of the project stoves.	B.7.2.7	For the loss of efficiency, the project will implement the default schedule of linear decrease as per paragraph 37(a) of the methodology. Therefore, sampling of project stoves is not considered.	Review-1: Ok Closed (The clarification was made.)
CAR-24 Please indicate the operational and management structure for the monitoring activities, clearly indicated the responsibilities and institutional arrangements for data collection and archiving.	B.7.3.1	Indicated in Section B.7.3. Other elements of monitoring plan	Review-1: Ok Closed (The operational and management structure for the monitoring activities were indicated in Section B.7.3.)
CL-1 Please provide the Purchase Agreement.	A.1.2.1	Purchase agreement is provided.	Review-1: Ok Closed (The Purchase Agreement was provided.)
CL-2 Please provide the evidence for this information stated in Section A.5.: "The funding for the production of stoves will be provided by the producer organization that will be legal owner of the VERs."	A.5.1	The funding will be provided by the project developer OffgridSun which is going to be the owner of the carbon credits generated.	Review-1: Ok Closed (The clarification was made.)
CL-3 Please provide Water-Boiling-Test (WBT) results and indicate who prepares this test in Section B.2 of the PDD.	B.2.6	WBT results are provided.	Review-1: Ok Closed (The WBT results were provided.)
CL-4	B.2.11	See attached to this document	Review-1:

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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.			Ok Closed (The signed letter was provided.)
CL-5 Please clarify about the charcoal conversion factor if applied for baseline or project fuel.	B.6.3.19	Charcoal conversion factor is applied to baseline fuel consumption and savings are calculated based on this amount. The average efficiency is calculated based on the percentages of each fuel use.	Review-1: Ok Closed (The clarification was made.)
CL-6 Please provide the table number on page 37 of the PDD.	B.7.2.1	Pinar	Review-1: Ok Closed (The table number was indicated.)
CL-7 Please provide the evidence document for the expected operational lifetime of the project activity.	C.1.2.1	Manufacturer's specification is provided.	Review-1: Ok Closed (The evidence document was provided.)
CL-8 For Principle 3, it is stated as "potentially". However, no mitigation is indicated. Please indicate the mitigation measure for this principle.	D.1.4	Revised Review 2: The cookstoves will be produced by Envotec who also provides services to governmental institutions. The company respects all applicable laws and regulations. Please see the company profile attached.	Review-1: For Principle 3, it is stated as "potentially". However, no mitigation is indicated. Please indicate the mitigation measure for this principle. Review-2: In Appendix 1, for "Principle 3: The Project shall avoid community exposure to increased health risks and shall not adversely affect the health of the workers and the community", the "Justification of Relevance" is indicated as "Potentially". Therefore, "Mitigation Measures added to

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			the Monitoring Plan" shall be indicated for this principle in Appendix 1. Review-3: Ok Closed (The clarification was made.)
CL-9 Please give the necessary contact information about TAREA and Mutina Group in Appendix 2.	Appendix 2-1	Contact information added. TAREA Group has decided to leave the partnership.	Review-1: Ok Closed (The contact information was provided in Appendix 2.)
CL-10 Please fill in the blanks in the table given in Appendix 3 (or specify them as N/A).	Appendix 3-1	Revised	Review-1: Ok Closed (Appendix 3 was revised accordingly.)
CL-11 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 accordingly.)
CAR-25 The "Appendix 3" has been repeated two times in the table of contents section on the cover page of PDD. Please correct the title of the section on the cover page.	ITR	Revised.	Review-1: Ok Closed (The numbering of the sections on the first page of the PDD was corrected.)
CAR-26 The SDGs (SDG13, SDG15, SDG03, SDG05, SDG08, SDG01) are discussed in the Table 1 of the PDD, however only the SDGs (SDG13, SDG15, SDG01) are discussed in the SDGs spreadsheet of the ERs Excelsheet. Additional details may be provided in the ERs sheet.	ITR	Added to the ER calculation sheet.	Review-1: Ok Closed (All SDG contributions were included in the ER Calculation Excel sheet.)

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CAR-27 a) The SDG impact description corresponding to the SDG03 is "Percentage of households that observed reduction in PM2.5and CO concentration reductions" as per the Table 1, however the description is "Number of households that observed reduction in PM2.5and CO concentration" as per the Section B.6 of the PDD. Inconsistent description shall be corrected throughout the PDD. b) Similarly, the SDG5 description is "Percentage of households with average time saving associated with cooking time and fuel collection" as per the Table 1, however the SDG5 description is "Average time saving associated with cooking time and fuel collection" as per Section B.6. Inconsistent description shall be corrected throughout the PDD.	ITR	a)Revised in the PDD b)Revised in the PDD	Review-1: a) Ok Closed (The SDG Indicator of SDG 3 was revised in Section B.6.) b) Ok Closed (The SDG Indicator of SDG 5 was revised in Section B.6.)
CAR-28 The SDG01 impact value is "496 USD/year" as per the Table 1, while the same is USD496.01/year in the ER sheet. Please correct the contradiction.	ITR	The figure is rounded in excel sheet.	Review-1: Ok Closed (The value was revised in the ER Calculation Excel sheet.)
CAR-29 The crediting period start date is considered as "01/12/2022" as per Section C.2.1, while the crediting years have been considered from "year 2023" onwards in the "ER Calculation" spreadsheet. Please correct this contradiction. Further, the start date of crediting period is "01 July 2022" as per the GS website. Please clarify the difference.	ITR	The project was planned to start on December 2022. The stove sale date is revised as 01/03/2023. The contributions to SDGs are re-calculated accordingly. Since 2024 and 2028 has 366 days, the annual ERs increased to 12,799 tCO2e once the exact dates are taken for calculation. 01 July 2022 will be revised by writing to Sustain-cert.	Review-1: Ok Closed (The crediting period was revised and the relevant calculations were re-calculated correctly throughout the PDD and ER Calculation Excel sheet.)

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CAR-30 The symbol for leakage (L) is not consistent with the leakage symbol (LEy) as available in the ERs Excelsheet. Please correct the contradiction.		Corrected.	Review-1: Ok Closed (The relevant symbol of the parameter was revised in Section B.6.2.)
CAR-31 a) The SDG 5 impact is provided as "The users of the project stoves are expected to save at least half an hour from cooking activities" in Section B.6.4, while the same is 95% in the Table 1 of the PDD. Please clarify the issue. b) Similarly, the SDG 1 impact is provided as "Each household will save USD 496 per year on average over the crediting period; each households will save 2,480 USD in total" in Section B.6.4, which is confusing. Hence appropriate corrections shall be provided in the statement.	ITR	a)Revised as "95% of all users of the project stoves are expected to save at least half an hour from cooking activities". b) Revised as "Each household will save USD 496 per year on average over the crediting period; each household will save 2,480 USD in total during the 5 years of crediting period."	Review-1: a) Ok Closed (The relevant statement in Section B.6.4 was revised.) b) Ok Closed (The relevant statement in Section B.6.4 was revised.)
CAR-32 a) The Thermal efficiency (charcoal) is 38.5% as per the Section A.3, however the same is 38% as per the supporting document (CAR 10 b_technical specification signed by Envotec). Please check on the differences observed. b) Similarly, the stove width and height provided in the Section A.3 (25 cm, 30 cm) does not match with the above supporting document (32 cm, 35 cm).	ITR	a)Thermal efficiencies are taken from the results of WBTs. Technical specifications are based on those tests and a typo error has been made for charcoal. b) Stove sizes are revised in the PDD as per the technical specifications provided by the manufacturer company.	Review-1: a) Ok Closed (The clarification was made.) b) Ok Closed (The technical specifications of the stoves were revised in Section A.3.)
CAR-33 The parameter symbol and unit is presented as "μ_y" and "Fraction" as per the Section B.6.3, while the same is presented as "my" and "%" in the "ER Calculation"		Revised as μy and fraction in the ER calculation sheet.	Review-1: Ok Closed (The ER Calculation Excel sheet was revised accordingly.)

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spreadsheet. Please correct the contradiction.			
CAR-34 a) The value of the parameter (No,j) is provided as "5,000" as per the Section B.7.1, while the same is "1" as per the "Cell E3" of the "ER Calculation" spreadsheet. Please correct the contradiction. b) In Section B.7.1, the unit is mentioned as "fraction", while the value is presented as "95%". Please correct the contradiction. Similarly, please check for the parameter (nnew,i,j) and (μ_y) as well in Section B.7.1. c) Please refer to the monitoring parameter table of the parameter (nnew,i,j), where the value is provided as "30.6%" and "38.5%" for the firewood and charcoal respectively. However as per the submitted documents, the efficiencies are "30.6%" and "38.5%" for charcoal and firewood respectively. Further, the version 09 of AMS II.G is used in the monitoring parameter table, while the version applied is "version 12" in the Section B.1 of the PDD. Please correct the contradiction.	ITR	a)Revised as 365 b)nn,y,i and nnew,i,j are revised as percentage. μ_y is fraction with a value ranging 0-1. c) The thermal efficiency values are taken from WBTs separately undertaken for each fuel. The methodology version is revised.	Review-1: a) Ok Closed (The ER Calculation Excel sheet was revised accordingly.) b) Ok Closed (The units of the relevant parameters were revised in Section B.7.1.) c) Ok Closed (The version of the applied methodology was revised in Section B.7.1.)
CL-12 a) The statement in the Eligibility criteria in Section A.1.1 (2.1.2 CS Projects shall lead to climate change mitigation and/or adaptation by providing or improving access……..") shall be corrected. b) Please refer to the Eligibility criteria in Section A.1.1 (3.1.1 Types of project – (d) Water, sanitation and hygiene (WASH): WASH activities contributing to climate change mitigation and/or adaptation benefits) of the	ITR	a)Revised asper the requirement b)Revised as type (b) c)Revised as requested	Review-1: a) Ok Closed (The relevant statement was revised in Section A.1.1.) b) Ok Closed (The eligibility criteria was revised as type (b) in Section A.1.1.) c) Ok Closed (The description of 3.1.4 (a) was revised in Section A.1.1.)

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Community Services Activity Requirements. As the project is a cookstove project, it is not clear as how the project falls under the category of Type (d). Check once again the Community Services Activity requirements and provide necessary corrections in this regard. c) In Section A.1.1, the description corresponding to the "3.1.4 (a)" does not match with the description as available in the Community Services Activity requirements. Please revise the relevant description in Section A.1.1.			
CL-13 In Section B.2, as per one of the applicability criteria of the applied methodology, the following applicability criteria shall also be discussed: "The CDM-PDD or CDM-PoA-DD/CPA-DD shall also explain how the proposed procedures prevent double counting of emission reductions, for example to avoid that project stove manufacturers, wholesale providers or others claim credit for emission reductions from the project devices" Hence the additional details shall be provided in the PDD.	ITR	Added as requested. TAREA has decided to leave the project. Please see attached the MoU signed among the project participants.	Review-1: Ok Closed (The relevant applicability condition was discussed in Section B.2. Related to TAREA, the relevant revisions were made throughout the PDD and the relevant MoU signed was provided.)
CL-14 In Section B.7.1, the applied methodology has one more parameter ("NdHH" Number of project devices distributed per household). Please check if the same is to be considered as the monitoring parameter in PDD.	ITR	There is a possibility that some households may purchase 2 stoves and that is discussed in Calculation of $B_{y,savings,i,j}$ under Section B 6.1 Monitoring parameter is added in Section 7.1.	Review-1: Ok Closed ($N_{d,HH}$ parameter was included in Section B.7.1.)
CL-15	ITR	SDG 15 and SDG1 will be calculated based on the number of operational stoves. Therefore, added to the	Review-1:

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There are various other SDGs parameters like "Average household savings at cooking due to the use of less fuelwood", "Total number of jobs" and so on as per the Section B.7.1, which are not considered as the monitoring parameter for sampling in the "Table 4. Monitoring parameters" of the Section B.7.2 of PDD. Hence all the monitoring parameters shall be discussed in the Section B.7.2 of the PDD for the purpose of sampling.		Table 4. SDG8 is added to Section B.7.3. as it is directly monitored, not sampled.	Ok Closed (Table 4 in Section B.7.2 was revised accordingly.)
CL-16 The following Assessment Questions/Requirements not discussed in the Appendix 1 of the PDD. b. For Projects involving land use tenure, are there any uncertainties with regards to land tenure, access rights, usage rights or land ownership? Principle 4.4 Indigenous people has been discussed in this section. "Is the Project's area of influence susceptible to excessive erosion and/or water body instability?"	ITR	This has been provided as a response to question 4.3. "Does the Project require any change, or have any uncertainties related to land tenure arrangements and/or access rights, usage rights or land ownership?" Safeguarding principles assessment is revised to include Principle 4.4 and all questions in 8.2	Review-1: Ok Closed (Appendix 1 was revised accordingly.)
CL-17 The footnote-3 in the PDD in Section A.1 does not open. Please correct the reference link.	ITR	The page does not exist any more. A new link has been provided.	Review-1: Ok Closed (The relevant reference link was revised in Section A.1.)

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