



**Verified Carbon
Standard**

COMMUNITY CARBON EFFICIENT COOKING PROGRAMME - TANZANIA-1

Document Prepared by

Carbon Check (India) Private Ltd.



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Summary:

- **A description of the project**

Project: The project “Community Carbon Efficient Cooking Programme - Tanzania-1”, employs VCS methodology; VMR0006 version 1.1 /B02-a/. The project involves distribution of energy efficient cookstoves to the households of Republic of Tanzania. It is intended under this project high thermal efficient cookstoves will be distributed which will burn charcoal more efficiently thereby improving thermal transfer to pots, hence saving fuel consumption. Apart from halting the progressing deforestation in Tanzania, this project will also reduce health hazards from indoor smoke pollution.

- **A description of the validation and verification**

Validation and Verification: Community Carbon has appointed Carbon Check (India) Private Ltd., to carry out the validation and verification of the project “Community Carbon Efficient Cooking Programme - Tanzania-1”, with regards to the relevant requirements of VCS Standard Version 4.4 (dated 17-January-2023). The verification is based on the desk review of the VCS Joint PD & MR /01-e/and the corresponding supporting emission reduction calculation spread sheets /02/ /03/ and other relevant supporting documents made available to the verification team by the project proponent accompanied by onsite interviews. This verification involves the period of 22-April-2022 to 31-August-2022.

- **The purpose and scope of validation and verification**

Purpose: The purpose of a validation is to have a thorough and independent assessment of the proposed project activity against the applicable VCS requirements, particularly the project’s baseline, monitoring plan and compliance with the relevant VCS and host Party criteria. These are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reductions. Carbon Check’s objective is to perform a thorough, independent assessment of the validation of the project activity.

The purpose of the verification is to review the monitoring results and verify that monitoring methodology was implemented according to monitoring plan and monitoring data, used to confirm the reductions in anthropogenic emissions by sources is sufficient, definitive and presented in a concise and transparent manner. In particular, monitoring plan, monitoring report and the project’s compliance with relevant VCS, UNFCCC and host party criteria are verified in order to confirm that the project has been implemented in accordance with previously registered design and conservative assumptions, as documented.

Scope: Validation scope is defined as an independent and objective review of the VCS Joint Project Description & Monitoring Report (PD-MR). The VCS Joint PD & MR is reviewed against the relevant criteria and guidance documents provided by VCS which include the following: VCS Program Guide (v4.3, dated 17-January-2023), VCS Standard (v4.4, dated 17-January-2023), Program Definitions (v4.3, dated 21-December-2022), Registration & Issuance Process (v4.3, dated 17-January-2023) VCS Validation and Verification Manual (v3.2, dated 19-October-2016) applicable at the time in order to confirm that the project meets the applicability conditions of the selected baseline and

monitoring VCS methodology VMR0006 (version 1.1), also assess the claims and assumptions made in the VCS Joint PD & MR without limitation on the information provided by the project participants.

The scope of the verification is:

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

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

- **The method and criteria used for validation and verification**

The validation consists of the following four phases:

I. A desk review of the project description documents

- A review of data and information;

Cross checks between information provided in VCS Joint PD & MR and information from sources with all necessary means without limitations to the information provided by the project proponent;

II. Onsite interviews with project stakeholders

- Interviews with relevant stakeholders in host country with personnel having knowledge with the project development via telephone, email or direct on-site visits;
- Cross checking between information provided by interviewed personnel with all necessary means without limitations to the information provided by the project proponent;

III. Reference to available information relating to projects or technologies similar to project under validation and review based on the approved methodology being applied for the appropriateness of formulae and accuracy of calculations.

IV. The resolution of outstanding issues and the issuance of the final verification report and opinion.

The method and criteria used for verification

(a) Desk review, involving:

- (i) Review of the data and information presented to verify their completeness;**

(ii) Review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the quality assurance and quality control procedures;

(iii) Evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions;

(b) Onsite assessment involving:

(i) Assessment of the implementation and operation of the proposed VCS project activity as per the registered VCS JOINT PD & MR;

(ii) Review of information flows for generating, aggregating and reporting the monitoring parameters;

(iii) Interview with relevant personnel to confirm that the operational and data collection procedures are implemented in accordance with the monitoring plan in the VCS JOINT PD & MR;

(iv) A cross-check between information provided in the monitoring report and data from other sources such as inventories, purchase records, or similar data sources;

(v) A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the VCS Joint PD & MR and the selected methodology;

(vi) Review of calculations and assumptions made in determining the GHG data and emission reductions;

(vii) Identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

- **The number of findings raised during validation and verification**

A risk-based approach has been followed to perform this joint validation & verification. During the course of joint validation & verification, a total of 23 findings were raised, which includes:

12 Corrective Action Request (CAR); 11 Clarification Requests (CLs);

All the raised findings were successfully resolved by the PP.

- **Any uncertainties associated with the validation and verification.**

There are no uncertainties associated with the joint validation & verification of the project activity. The validation has been done with a reasonable level of assurance.

The VCS Joint PD & MR/01-e/, emissions reduction calculations /02//04/ along with the supporting documents provided are in line with all the VCS requirements /B01/. The verification team has detected no further uncertainties or quality restriction.

- **Summary of the validation and verification conclusions**

The total estimated ERs for the entire crediting period was 6,531,645 tCO₂e with the annual average of 933,092 tCO₂e . The actual ERs achieved for the current monitoring period i.e., from 22-April-2022 to 31-August-2022 is 1,193 tCO₂e.

Carbon Check (India) Private Ltd. concludes the validation and verification with a positive opinion that the VCS Project “Community Carbon Efficient Cooking Programme - Tanzania-1” as described in the VCS joint PD and MR (version 6.0 dated 14-September-2023) /01-e/, meets all applicable VCS requirements, including those specified in the VCS Standard (v4.4, dated 17-January-2023), relevant methodology, tools and guidelines.

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1 INTRODUCTION

1.1 Objective

Community Carbon has appointed the VVB, Carbon Check (India) Private Ltd. to perform a joint validation and verification of the VCS Project “Community Carbon Efficient Cooking Programme - Tanzania-1”. This report summarizes the findings of verification of the project, performed based on the VCS Program Guide (v4.3, dated 17-January-2023), VCS Standard (v4.4, dated 17-January-2023), Program Definitions (v4.3, dated 21-December-2022), Registration & Issuance Process (v4.3, dated 17-January-2023), VCS Validation and Verification Manual (v 3.2, dated 19-October-2016). Verification is required for all VCS project activities intending to register project under the VCS program. The purpose of a joint validation and verification is to have a thorough and independent assessment of the proposed project against the applicable VCS requirements, in particular, the project’s baseline, monitoring plan and the project’s compliance with relevant VCS and host Party criteria. These are validated in order to confirm that the project design and monitoring report, as documented, is sound and reasonable and meets the identified criteria. Validation and verification is a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of emission reductions, VCUs.

Through this joint validation and verification activities, it is to be confirmed that:

- The project is implemented as described in the VCS Joint Project Description & Monitoring record document /01-e/
- The monitoring system is implemented and fully functional to generate emission reductions without any double counting, and
- The data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reductions calculation.

The joint validation and verification followed the requirements of the current version of the VCS standard version 4.4/B01-a/ and VCS program guide (version 4.3)/B01-b/ to ensure the quality and consistency of the joint validation and verification work and the report.

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the Joint Project Description (PD) and Monitoring Report, project design, the project’s baseline study and monitoring plan and other relevant documents. The PD is reviewed against the relevant criteria and decisions by the VCS Program, and against the approved baseline and monitoring

methodology. Carbon Check has employed a risk-based approach in the validation, focusing on the identification of significant risks and reliability of project monitoring and generation of emission reductions.

The verification is not meant to provide any consulting towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

The joint validation and verification of this project is based on the VCS Joint PD & MR /01-e/ corresponding emission reduction calculation spreadsheets /02/, supporting documents made available to the verifier /02 – 24/ and information collected through performing onsite visit interviews. Furthermore, publicly available information was considered as far as available and required.

CC IPL has employed a risk-based approach in the verification, focusing on the identification of significant risks and reliability of project monitoring and generation of emission reductions.

The joint validation and verification are carried out on the basis of the following requirements, applicable for this project:

- VCS Program Guide v4.3 (dated 17-January-2023)
- VCS Standard v4.4 (dated 17-January-2023)
- Program Definitions v4.3 (dated 21-December-2022)
- Registration & Issuance Process v4.3 (dated 17-January-2023)
- VCS Validation and Verification Manual v 3.2 (dated 19-October-2016)
- VCS Methodology: VMR0006.: Methodology for Installation of High Efficiency Firewood Cookstoves” (Version 1.1)/BO2-a/.
- Other relevant rules, including the host country legislation.

The scope of this joint validation and verification, by independent checking of objective evidence, is as follows:

- To verify that the project is implemented as described in the joint VCS Joint PD & MR.
- To assess the project's compliance with other relevant rules including the host country legislation.
- To confirm that the monitoring system is implemented and fully functional to generate voluntary emission reductions without any double counting.
- To establish that the data reported are accurate, complete, consistent, transparent, and free of material error or omission by checking the monitoring records and the emissions reduction calculation.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement.
- To verify that reported GHG emission data is sufficiently supported by evidence.
- The verification shall ensure that the reported emission reductions are complete and accurate in order to be certified.

The method and criteria used for verification consisted of the following phases:

1. Completeness check and desk review
2. On site interviews with stakeholders
3. Resolution of outstanding issues and issuance of final verification report and applicable VCS Validation and Verification Deeds of Representation.

CCIPL conducts all its work under strict rules to safeguard impartiality and ensure the independence of the verification team. The verification team VVBs not provide any consulting or recommendations for the client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

1.3 Reasonableness of Assumptions and Level of Assurance

The joint validation and verification report is based on the VCS Joint PD & MR /01-e/, supporting documents /02//24/ made available to the verifier and information collected through performing interviews.

The verification has been planned and organized to achieve a:

- ☒ Reasonable level of assurance as per VCS Standard (v4.4)
- ☐ Limited level of assurance

The threshold for quantitative materiality with respect to the aggregate of errors, omissions and misrepresentations, relative to the total reported GHG emission reductions and/or removals was limited to five percent, as required by section 4.1.8 of the VCS Standard version 4.4 /B01-a/.

1.4 Summary Description of the Project

The project “Community Carbon Efficient Cooking Programme - Tanzania-1” is a project which employs of the VCS methodology; VMR0006 version 1.1 /B02-a/. The project involves distribution of energy efficient cookstoves to the households in Tanzania. Presently the project activity is planned to be included with distribution of 425,000 ICS in Tanzania households as provided in VCS Joint PD & MR section 1.1/01-e/. The technology distributed under this group project is fuel efficient Smart Home Pro stove. PP has considered each ICS distributed as a project activity instance. The start date for the project is 22-April-2022 /04/, which is the date of installation/registration of the first stove in the project.

The project proponent for the project activity is Community Carbon, owns the rights to VCU's /06/.

The project activity has been implemented as described in the VCS joint PD & MR /01-e/ and the emission reductions are calculated conservatively as per the applied methodologies /B02/. The ICS numbers has varied during the actual implementation and same has been updated during verification activity. The annual average GHG emission reduction estimated is 933,092 tCO_{2e} and total 6,531,645 tCO_{2e} for the ICS project activity over the entire renewal crediting period of 07 years which can be renewed for maximum two times.

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

Community Carbon has appointed the VVB, Carbon Check (India) Private Ltd., to carry out the joint validation and verification of the project “Community Carbon Efficient Cooking Programme - Tanzania-1”, with regards to the relevant requirements of VCS Standard Version 4.4 /B01-a/.

The joint validation and verification include a thorough and independent assessment of the proposed project against the applicable VCS requirements/B01/, in particular, the project's

baseline, additionality, monitoring plan and the project's compliance with relevant VCS and host party criteria. The validation involves assessment of the project and to confirm that the project meets the applicability conditions of the selected methodology, VMR0006. version 1.1 /B02-a/ and assess the claims and assumptions made in the VCS Joint PD & MR /01-e/ without limitation on the information provided by the project participants. The overall joint validation and verification was conducted using Carbon Check's internal procedures.

The Joint validation and verification consist of the following three phases:

1. Completeness check and desk review of the VCS Joint PD & MR, monitoring plan, monitoring methodology, applicable tools in particular attention to the frequency of measurements, quality of metering equipment including calibration requirements, QA/QC procedures and other relevant documents.
2. On site visit interviews (including follow-up interviews with project stakeholders, when deemed necessary). The onsite interviews include the following:
 - An assessment of implementation and operation of project activity with respect to VCS Joint PD & MR.
 - Review of information flows for generating, aggregating, and reporting the monitoring parameters.
 - Interview with relevant personals to determine whether the operational and data collection procedures are implemented and in accordance with the monitoring plan of the project.
 - Cross check of information and data provided in the monitoring report with purchase records or similar data sources.
 - Review of assumptions made in calculating the emission reductions (if any).
 - Implementation of QA/QC procedure in-line with the VCS joint PD & MR and methodology requirements.
3. Resolution of outstanding issues and the registration and issuance of the final joint validation and verification report and as applicable the VCS validation and verification Deed of Representation.

2.2 Document Review

During the document review, CCIPL has applied standard auditing techniques to assess the quality of information provided. The verification was performed primarily based on the review of the monitoring report and the supporting documentation. This process included:

- A review of data and information presented by the PP to verify their completeness

- A review of the MP and monitoring methodology, paying particular attention to the frequency of measurements, the quality of metering equipment including calibration requirements, and the QA/QC procedures, and
- An evaluation of data management and the QA/QC system in the context of their influence on the generation and reporting of ERs.

The VCS Joint PD & MR /01-e/ was initially reviewed and CCIPL requested the PP to present the supporting information and documents /02/-/24/. The documents were reviewed by CCIPL. Through the process of the validation and verification, the revised VCS Joint PD and MR, monitoring report and the supporting documents were evaluated to confirm the actions taken by the PP to the CARs and CLs issued by the CCIPL team.

The list of documents referred during the course of this verification has been provided in Appendix-1.1.

2.3 Interviews

The table below describes the onsite interview process and further identifies personnel, including their roles, who were interviewed and/or provided information additional to that provided in the VCS Joint PD & MR /01-e/ and any supporting documents.

VVB has applied an acceptance sampling in accordance with the paragraph 26 & 39 c of the Standard: Sampling and surveys for CDM project activities and programmes of activities, Version 09.0. Accordingly, 11 samples from baseline survey and 11 samples from monitoring survey were chosen, based on AQL of 0.5% and UQL of 20%: producer risk of 10% and consumer risk of 10 % with acceptance number as 0. No discrepant records were found during the onsite inspection.

Table 01: On-site interview process

Sr. no	Date	Name	Organisation	Topic	Interviewer
/01/	03-May-2023 to 5-May-2023	Apoorva Maria	UpEnergy Group	• Project Design • Project Implementation status • Project start date and Project Location • Baseline Scenario • Baseline Identification and Additionality • Qualification and Training • Monitoring and reporting documentation	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu

				• Quality Assurance – Management and operating system • Social and Environmental Impacts • Local Stakeholders meeting process • Compliance with relevant laws • Roles and responsibility	
/02/	03-May-2023	Anantha Karthik	Community Carbon	• Discussion/introduction on the stated goal and policy of the Grouped project activity. • Discussion on the SDG Contributions (Qualitative & Quantitative) of the project. • Discussion on the expected impacts on the stakeholders. • Discussion on the local stakeholders meeting, stakeholder's engagement process and grievance addressal mechanism. • Start date of the Grouped project activity. • Discussion on SDG monitoring plan of the project.	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/03/	03-May-2023	Samarth Barve	UpEnergy Group	• Discussion/introduction on the stated goal and policy of the Grouped project activity. • Discussion on the SDG Contributions (Qualitative & Quantitative) of the project. • Discussion on the expected impacts on the stakeholders.	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu

				• Discussion on the local stakeholders meeting, stakeholder's engagement process and grievance addressal mechanism. • Start date of the Grouped project activity. • Discussion on SDG monitoring plan of the project.	
/04/	03-May-2023 to 5-May-2023	Rachel Macha	UpEnergy Tanzania (Sayari Safi Ltd)	• Project Design • Project Implementation status • Project start date and Project Location • Baseline Scenario • Baseline Identification and Additionality • Qualification and Training • Monitoring and reporting documentation • Quality Assurance – Management and operating system • Social and Environmental Impacts • Local Stakeholders meeting process • Compliance with relevant laws • Roles and responsibility	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/05/	03-May-2023 to 5-May-2023	Rehema Mbalamwezi	UpEnergy Tanzania (Sayari Safi Ltd) – Country Director	• Project Design • Project Implementation status • Project start date and Project Location • Baseline Scenario	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu

				• Baseline Identification and Additionality • Qualification and Training • Monitoring and reporting documentation • Quality Assurance – Management and operating system • Social and Environmental Impacts • Local Stakeholders meeting process • Compliance with relevant laws • Roles and responsibility	
/06/	03-May-2023	Fredrick Ponceous	UpEnergy Tanzania (Sayari Safi Ltd) - Data collection team	Discussion on the data collection, baseline survey and monitoring survey	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/07/	03-May-2023	Thamizharsi Kaliaperumal	UpEnergy Group	• Project Design • Project Implementation status • Project start date and Project Location • Baseline Scenario • Baseline Identification and Additionality • Qualification and Training • Monitoring and reporting documentation • Quality Assurance – Management and operating system • Social and Environmental Impacts • Local Stakeholders meeting process • Compliance with relevant laws	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu

				• Roles and responsibility	
/08/	03-May-2023	Salumu Joe	UpEnergy Group (field coordinators)	Discussion on the data collection, baseline survey and monitoring survey	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/09/	03-May-2023	Violet S Hermes	UpEnergy Group (field coordinators)	Discussion on the data collection, baseline survey and monitoring survey	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/10/	03-May-2023	Revocaths V Bariki	UpEnergy Group (field coordinators)	Discussion on the data collection, baseline survey and monitoring survey	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/11/	03-May-2023	Emmanuel Ibrahim	UpEnergy Group (field coordinators)	Discussion on the data collection, baseline survey and monitoring survey	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/12/	05-May-2023	Melita Kanafonz	Stakeholder - T.E.G	- Local Stakeholder Consultation - Social and Environmental Impacts	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/13/	05-May-2023	Kulwa Yahaya	Stakeholder - Food vendor	- Local Stakeholder Consultation - Social and Environmental Impacts	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/14/	05-May-2023	Fatuma Shomary	Stakeholder - Food vendor	- Local Stakeholder Consultation - Social and Environmental Impacts	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/15/	05-May-2023	Rachel Msifuni	Stakeholder - Food vendor	Local Stakeholder Consultation	Pallavi G Gedam, Pradnya Vernekar

				Social and Environmental Impacts	and Niima Yandu
/16/	05-May-2023	Halima nicolaus	Stakeholder - Food vendor	- Local Stakeholder Consultation - Social and Environmental Impacts	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/17/	05-May-2023	Sarah Mbotwa	Stakeholder - Food vendor	- Local Stakeholder Consultation - Social and Environmental Impacts	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/18/	05-May-2023	Christina J Cheyo	Stakeholder - Food vendor	- Local Stakeholder Consultation - Social and Environmental Impacts	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/19/	05-May-2023	Hamida	Stakeholder - Food vendor	- Local Stakeholder Consultation - Social and Environmental Impacts	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/20/	05-May-2023	Scola Joseph	Stakeholder - Food vendor	- Local Stakeholder Consultation - Social and Environmental Impacts	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/21/	03-May-2023	Mama Amina	End users - Baseline survey	Discuss on the baseline scenario (baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking.	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/22/	03-May-2023	Pascal Kobelo	End users - Baseline survey	Discuss on the baseline scenario (baseline cooking technology, cooking habits, fuel consumption and drawbacks of the	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu

				baseline technology use for cooking.	
/23/	03-May-2023	Yusuf Musa Kieti	End users - Baseline survey	Discuss on the baseline scenario (baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking.	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/24/	03-May-2023	Mama Pastori	End users - Baseline survey	Discuss on the baseline scenario (baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking.	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/25/	03-May-2023	Ramdhani Amri Mtamani	End users - Baseline survey	Discuss on the baseline scenario (baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking.	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/26/	03-May-2023	Severin Nambari Mtamani	End users - Baseline survey	Discuss on the baseline scenario (baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking.	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/27/	03-May-2023	Grace Richard	End users - Baseline survey	Discuss on the baseline scenario (baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking.	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/28/	04-May-2023	Jacklin Yona	End users - Baseline survey	Discuss on the baseline scenario (baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking.	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu

/29/	04-May-2023	Rehema Mavula	End users - Baseline survey	Discuss on the baseline scenario (baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking.	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/30/	04-May-2023	Shiza Iddi Chanyoya	End users - Baseline survey	Discuss on the baseline scenario (baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking.	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/31/	04-May-2023	Mwajabu mwinshhe Saleh	End users - Baseline survey	Discuss on the baseline scenario (baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking.	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/32/	04-May-2023	Abdala muhamed Stove ID - VSP02634	End users - Monitoring survey	Onsite interviews (Ex-post parameters) - To check Number of project devices operating during year y (Ny,j,j) - To check Adjustment to account for any continued use of pre-project devices during the year y (μ_y) - Baseline Scenario - Additionality	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/33/	04-May-2023	Leah Naftari Stove ID - VSP14111	End users - Monitoring survey	Onsite interviews (Ex-post parameters) To check Number of project devices operating	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu

				during year y ($N_{y,j,j}$) - To check Adjustment to account for any continued use of pre-project devices during the year y (μ_y) - Baseline Scenario - Additionality	
/34/	04-May-2023	Eunice Rechard Stove ID – VSP07700	End users – Monitoring survey	Onsite interviews (Ex-post parameters) - To check Number of project devices operating during year y ($N_{y,j,j}$) - To check Adjustment to account for any continued use of pre-project devices during the year y (μ_y) - Baseline Scenario - Additionality	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/35/	04-May-2023	Jeni Fredy Stove ID – VSP07192	End users – Monitoring survey	Onsite interviews (Ex-post parameters) - To check Number of project devices operating during year y ($N_{y,j,j}$) - To check Adjustment to account for any continued use of pre-project devices during the year y (μ_y) - Baseline Scenario - Additionality	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu

/36/	04-May-2023	Shedrak Ignazi Stove ID – VSP02845	End users – Monitoring survey	Onsite interviews (Ex-post parameters) - To check Number of project devices operating during year y ($N_{y,j,j}$) - To check Adjustment to account for any continued use of pre-project devices during the year y (μ_y) - Baseline Scenario - Additionality	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/37/	04-May-2023	Rebecca Benjamin Stove ID – VSP53318	End users – Monitoring survey	Onsite interviews (Ex-post parameters) - To check Number of project devices operating during year y ($N_{y,j,j}$) - To check Adjustment to account for any continued use of pre-project devices during the year y (μ_y) - Baseline Scenario - Additionality	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/38/	04-May-2023	Asha Ramadhan Stove ID – VSP11885	End users – Monitoring survey	Onsite interviews (Ex-post parameters) - To check Number of project devices operating during year y ($N_{y,j,j}$) - To check Adjustment to account for any continued use of pre-project	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu

				devices during the year y (μ_y) - Baseline Scenario - Additionality	
/39/	04-May-2023	Zainab Tamba Stove ID – VSP12191	End users – Monitoring survey	Onsite interviews (Ex-post parameters) - To check Number of project devices operating during year y ($N_{y,j,j}$) - To check Adjustment to account for any continued use of pre-project devices during the year y (μ_y) - Baseline Scenario - Additionality	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/40/	04-May-2023	Faraja Mbepo Stove ID – VSP0443	End users – Monitoring survey	Onsite interviews (Ex-post parameters) - To check Number of project devices operating during year y ($N_{y,j,j}$) - To check Adjustment to account for any continued use of pre-project devices during the year y (μ_y) - Baseline Scenario - Additionality	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu
/41/	05-May-2023	Asumini Bushiri Stove ID – VSP01309	End users – Monitoring survey	Onsite interviews (Ex-post parameters) To check Number of project devices operating during year y ($N_{y,j,j}$)	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu

				- To check Adjustment to account for any continued use of pre-project devices during the year y (μ_y) - Baseline Scenario - Additionality	
/42/	05-May-2023	Amina Abrahamani Stove ID – VSP56058	End users – Monitoring survey	Onsite interviews (Ex-post parameters) - To check Number of project devices operating during year y ($N_{y,j,j}$) - To check Adjustment to account for any continued use of pre-project devices during the year y (μ_y) - Baseline Scenario - Additionality	Pallavi G Gedam, Pradnya Vernekar and Niima Yandu

2.4 Site Visits

Carbon Check has conducted an on-site inspection from 03-May-2023 to 05-May-2023 to confirm the implementation and operation status of the project activity. A reasonable level of assurance has been maintained through the on-site visit for the purpose of validation and verification as follows:

- An assessment of the implementation and operation of the project activity through onsite interviews with the representatives of project proponent and end users.
- Confirmation of the pre-project scenario
- Confirmation of the applicability of the methodology and monitoring and controlling instruments and operational arrangements.
- Confirm the data collection procedures are implemented in accordance with the MP
- Assessment of the project boundaries
- Assessment of the monitoring provisions by checking the monitoring arrangement.

- A review of information aggregating and reporting of the monitoring parameters
- A check of the observations of monitoring practices against the requirements of the VCS Joint PD & MR/01/ and the applied monitoring methodologies
- A review of calculations and assumptions made in determining the GHG data and ERs, and
- An identification of QA/QC procedures in place to prevent, or identify and correct, any errors or omissions in the reported monitoring parameters

2.5 Resolution of Findings

This section summarizes the findings from the joint validation & verification of the project activity. In this section the findings from the document review, assessments and onsite interviews are provided. Material discrepancies identified in the course of the validation are addressed either as CARs, CLs or FARs.

- Clarification requests (CLs): Project reporting lacks transparency and further information is needed to determine if a material discrepancy is present.
- Corrective action requests (CARs): The VVB has identified a material discrepancy or non-conformance that the project proponent must address.

The validation & verification team identified 12 CAR and 11 CLs. All CAR and CLs raised by Carbon Check during this joint validation & verification have been resolved. Please refer to Appendix 4 below for the details of the CARs/CLs and their closure. If this was not completed, the ERs cannot be certified and recommended for issuance to the VCS Registry.

2.5.1 Forward Action Requests

A **forward action request (FAR)** should be issued, where:

Forward Action Request (FAR) is to be raised when the monitoring and reporting require attention and/or adjustment for the next verification period. FARs VVBs not relate to VCS requirements for issuance of ERs achieved during subject monitoring.

CC IPL has not raised any FAR during this joint validation and verification.

3 VALIDATION FINDINGS

3.1 Project Details

Project type, technologies and measures implemented, and eligibility of the project.

The project “Community Carbon Efficient Cooking Programme - Tanzania-1” employs baseline and monitoring methodology; VRM0006 version 1.1 /B02-a/. The project involves distribution of fuel-efficient improved cook stoves – Smart Home Pro in Tanzania for this monitoring period. This project promotes the distribution Smart Home Pro stove to 425,000 households in Tanzania. PP has considered batches as the project activity instances. The implementation schedule is given in section 1.1 of the VCS Joint PD & MR. The project results in reducing the amount of non-renewable biomass used for cooking. Through reduction in non-renewable biomass consumption, the programme will decrease greenhouse gas emissions. The Smart Home Pro stove will burn the charcoal efficiently, which improves the thermal energy direct to the pot, so conserving nonrenewable biomass.

ICS reduces nonrenewable consumption and emissions savings but also has many other benefits for the household. It contributes to sustainable development in Tanzania through:

- SDG 5 (Target 5.1, 5.4, 5.5): The project activity provided employment to women, thus helping to eradicate gender-based discrimination Time savings for the person cooking; this is a highly valued benefit for the household as cooks now add productive time to their working day. The project also encourages women participation in Leadership/managerial roles.
- SDG 7: Providing households with efficient and affordable cooking technology – ICS.
- SDG 8 (Target 8.5, 8.b.1): The project activity provides trainings and skill development programs for the youth population.
- SDG 12: The ICS distributed will help in reducing the consumption of non-renewable biomass
- SDG 13: Reduced GHG emission with use of efficient cooking technology.
- SDG 15: Reducing deforestation due to efficient fuel usage that occurs with using ICS.

Section 1.1. of the VCS Joint PD& MR /01/ contains a clear summary description of the projects. The completeness and accuracy of the project description was validated through onsite interviews.

The eligibility criteria have been provided clearly in section 1.4 of the Joint PD & MR /01-e/ and then justification provided for inclusion of project activity instances for the VCS methodology.

Table 02:-Eligibility criteria of the grouped project activity

Sl. No.	Eligibility criteria for the inclusion of new project activity instances	Applicability	Assessment by the validation team
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1.	Meet the applicability conditions set out in the methodology applied to the project.	New project activity instances ICS (Improved Cookstoves) will meet the applicability conditions set out in Section 3.2 of this document. How the PI is complying and Evidences Please see section 3.2 of this document for details	VVB has reviewed the manufacturer specification/05/ which confirms that the ICS distributed to the end users has 37.90% thermal efficiency. This is deemed appropriate to the VVB. Thus, the eligibility criteria has been met for the new project activity instances under this group project.
2.	Occur within one of the designated geographic areas specified in the project description.	New project activity instances will be located within the geographic boundaries of Tanzania. How the PI is complying and Evidences The project activity instances are located in urban/rural regions of Tanzania. Evidence: a) Project database (sales record) with contact details of HHs.	The Validation team through self-declaration review /25/ and onsite interviews ensures that the project location is the same as demonstrated in the section 1.12 of the Joint PD & MR/01/. PP has installed Smart Home Pro stove during the current monitoring period within the project boundary of Tanzania and will replace the baseline cookstoves. This has also been mentioned in the Joint PD and MR/01/. Thus, the eligibility criteria has been met for the new project activity instances under this group project.
3.	Be eligible for crediting from the start date of the instance through to the end of the project crediting period (only).	Each project activity Instances within this GP shall be eligible for crediting from its start date through to the end of the project crediting period (only). How the PI is complying and Evidences	The start date for the project activity is 22-April-2022 as stated in the VCS Joint PD & MR /01-e/. PP has considered the start date of commissioning of first batch ICS. The validation team reviewed the provided sale record /04/ and confirmed

		The project is eligible for crediting from start date, which is 22-April-2022. Evidence: Distribution Database shared with VVB	that the start date is on or after the start date of the grouped project activity. Also, the validation team confirms that the crediting period of the project activity instances lies within the lifetime of the grouped project activity. Based on the above assessment, validation team concludes, that the eligibility criteria has been met for the new project activity instances under this group project
4.	Have a start date that is the same as or later than the grouped project start date.	Only project activity Instances having a start date that is the same as or later than the GP start date will be included in the GP. The start date of GP is the date of distribution of first unit as per section 1.8 of this document. And subsequent additions will have start date after GP start date only. How the PI is complying and Evidences The start date of project is 22-April-2022 (start date of distribution of first ICS under the Grouped project) which is same as the start date of the Grouped Project. Evidence: Distribution database	The start date for the project activity is 22-April-2022 as stated in the VCS Joint PD & MR /01-e/. PP has considered the start date of commissioning of first batch ICS. The validation team reviewed the provided sale record /04/ and confirmed that the start date is on or after the start date of the grouped project activity. Also, the validation team confirms that the crediting period of the project activity instances lies within the lifetime of the grouped project activity. Based on the above assessment, validation team concludes, that the eligibility criteria has been met for the new project activity instances under this group project
5	The specifications of technologies or	Project instances under this project will consist of the	VVB through document review and onsite visit

	measures including the level and type of service performance specifications including compliance with testing/certifications.	distribution of ICS with a thermal efficiency of at least 25% efficiency as per water boiling test to household users cooking with nonrenewable biomass in the baseline scenario. The project instances will involve replacement of conventional cook-stoves with ICS as defined in the Joint VCS PD & MR. Stove types replaced and implemented is defined in the VCS PD, hence involve efficiency improvements in the thermal applications of nonrenewable biomass appliances as per VMR0006. How the PI is complying and Evidences The project activity instances cookstoves have higher efficiency and better emission parameters compared to the baseline scenario. Evidence: Manufacturer's specification/distribution records.	confirms that PP will be using only ICS with the thermal efficiency of at least 25% and above and no other stove model under this grouped project. This has also been mentioned in the Joint PD & MR. Thus, the eligibility criteria has been met for the new project activity instances under this group project.
6	VCUs ownership	End users receiving ICSs under the specific project instances contractually cede their rights to claim and own emission reductions under the VCS to the PP of the project. How the PI is complying and Evidences A default distribution agreement for end users including the provision that	The validation team during the interviews and document review understood that Community Carbon is the sole entity. Moreover, in section 1.7 of the revised PD it is clearly mentioned about ownership and right transfer from the end users. This is in line with section 3.6.1 of the VCS standard version 4.3.

		emission reductions generated by the improved stove are owned by the PP will be provided for each household.	Thus, the eligibility criteria has been met for the new project activity instances under this group project.
7	Are subject to the baseline scenario determined in the project description for the specified project activity and geographic area.	The new project activity instances will be installed within Tanzania and new project activity instances shall be added subject to the same baseline scenario determined in Section 3.4 of this Joint VCS PD & MR. How the PI is complying and Evidences The project activity instances have the same baseline scenario as defined in section 3.4 of this document i.e., use of traditional charcoal cookstove for cooking in different regions of Tanzania. Evidence: A Baseline survey report which shall be shared with the VVB. This information will be stored during monitoring and in the database.	VVB through document review and onsite visit interviews analyze that the baseline is demonstrated in the section 3.4 of the joint PD & MR/01-e/. PP will install only energy efficient cook stove within the project boundary of Tanzania and will replace the baseline cookstoves. This has also been mentioned in the joint PD & MR. Thus, the eligibility criteria have been met for the new project activity instances under this group project.
8	Additionality Have characteristics with respect to additionality that are consistent with the initial instances for the specified project activity and geographic area.	The project activity instances added to this GP shall comply with all the additionality conditions listed in section 3.5 and should be clearly defined in the Joint VCS PD & MR. How the PI is complying and Evidences The project activity instances is additional and is described	VVB through document review and onsite visit interviews analyze that PP has demonstrated additionality as per the methodology VMR0006 version 1.1 section 7 which states that activity method to demonstrate the additionality. This has also been mentioned in the PD.

		in section 3.5 of this document. Evidence: End user interview and carbon title transfer form	PP has demonstrated regulatory surplus in accordance with the rules and requirements regarding regulatory surplus set out in the latest version of the VCS Standard and it can be confirmed that the project is not mandated by any law, statute or other regulatory framework, or for UNFCCC non-Annex I countries, any systematically enforced law, statute or other regulatory framework. Furthermore, the project activity meets all the applicability conditions of the applied methodology VMR0006, version 1.1 and since the cookstoves are distributed at highly subsidized rate, PP has applied investment analysis concluding that the project is not feasible without the revenue generation from VCUs. Thus, the eligibility criteria have been met for the new project activity instances under this group project.
9	Capacity Limit	Where a capacity limit applies to a project activity included in the project, no project activity instance shall exceed such limit. Further, no single cluster of project activity instances shall exceed the capacity limit, determined as follows: 1) Each project activity instance that exceeds one percent of the capacity limit shall be identified.	PP has considered each ICS as a project activity instance which is deemed acceptable as per the VCS Program Definitions v4.3 /B01-e/ and VCS Standard v4.4 /B01-a/. This criterion is deemed appropriate, and it can be verified from the energy

		2) Such instances shall be divided into clusters, whereby each cluster is comprised of any system of instances such that each instance is within one kilometer of at least one other instance in the cluster. Instances that are not within one kilometer of any other instance shall not be assigned to clusters. 3) None of the clusters shall exceed the capacity limit and no further project activity instances shall be added to the project that would cause any of the clusters to exceed the capacity limit. How the PI is complying and Evidences No project activity instance shall exceed the applicable limit, which is 180 GWhth/y..	saving per ICS included in the grouped project.
10	Target Population End user for each project activity instances is households (residential) cooking with non- renewable biomass on inefficient charcoal stoves. Each ICS will be assigned a unique serial number with name of ICS user, address, GPS of household, stove model, distribution date, etc.	How the PI is complying and Evidences End user registration certificate and stove installation database.	Based on the review of the VCS Joint PD & MR /01-e/, interviews, declaration letters from the PP /25/, verification team is able to confirm that the target group for the distribution of ICS /09/ will be households, community kitchens (religious, educational institutions etc.) or small /medium enterprises cooking with non- renewable biomass on inefficient wood. Furthermore, project activity will disseminate ICSs over the project boundaries of Tanzania. Based on the above assessment, validation

			team concludes that this eligibility criteria have been met for the new project activity instances under this group project.
11	Double Counting The Improved Cookstove distributed under this project shall be uniquely identifiable based on the distribution records.	How the PI is complying and Evidences Each ICS installed under this grouped project activity shall have a unique, non-replicable serial number. This number along with corresponding end user details (i.e., name, geographical coordinates, address, unique serial number) shall form the unique identity of the stove distinguishing it from other stoves. No individual serial number can be repeated within the project, thus ensuring that each stove is counted only once in the proposed project. In addition, the project will be crosschecked against other projects in same host country on other relevant voluntary carbon schemes to ensure that the ICS is not included in any other project activity. Evidence: - No Double Counting Declaration	The verification team by means of onsite interviews with the PP representative confirms that the ICSs distributed under this project activity will have unique identification number with the combination of customer 's name, address, geographical location clearly identifiable. Hence there will be no double counting of project device within the project, PP has submitted the self-declaration to VVB /25/, confirms that the proposed procedures prevent double counting of emission reductions. This criterion is deemed appropriate, and it can be verified from the energy saving per ICS included in the grouped project.

Based on the above assessment, VVB confirms that inclusion of project activity instances in the grouped project is valid.

Project proponent and other entities involved in the project and Ownership.

The project proponent is Community Carbon which will be holding the carbon credits generated from the project activity as per section 1.7 of VCS Joint PD & MR /01-e/.

Project start date

The start date for the project is 22-April-2022 /04/ which is the earliest date of commissioning date of a batch distributed for first project activity instance under this group project. This is in accordance with paragraph 3.7 of the VCS standard v.4.3/B01-a/.

Project crediting period

The crediting period starts on 22-April-2022 /04/, which is the same day on which the first stove was installed, and lasts for 07 years, which can be renewed for maximum 2 times. This is in accordance with paragraph 3.8.1 of the VCS standard version 4.4/B01-a/ for non-AFOLU projects.

Project scale and estimated GHG emission reductions or removals

The group project activity is expected to reduce emissions by more than 300,000 tCO₂e per year. The validation team confirms that the project activity falls under 'Large Project' in accordance with paragraph 3.9.1 of the VCS standard v.4.3/B01-a/. The total estimated GHG emission reductions expected from the grouped project are 6,531,645 tCO₂e for the seven years renewable crediting period and average of 933,092 tCO₂e/year.

Project location

The indication of the project activity instance location and the geographic boundaries is provided in section 1.12. of the VCS Joint PD & MR. They are in accordance with paragraph 3.11.1 of the VCS Standard and can confirm that the project activity boundary is uniquely defined. The project location and geographic boundaries of the project is Tanzania for this monitoring period. This is in accordance with paragraph 3.6.4 of the VCS standard version 4.4 /B01-a/, which requires projects to have one or more clearly defined geographic areas within which new project activity instances may be developed.

The VCS Joint PD & MR clearly indicates the project scope, which is scope 3: Energy demand, and more specifically demand-side energy efficiency project. The project includes multiple project activity instances or locations and is developed as a grouped project, this is indicated in section 1.2. of the VCS Joint PD & MR /01-e/.

Conditions prior to project initiation

Traditional cookstoves (TSFs) and charcoal stove were used in the households. The project will replace baseline stoves which are charcoal stoves only using large quantities of non-renewable biomass with high efficiency stoves using biomass more economically thereby reducing emissions of greenhouse gases.

Project compliance with applicable laws, statutes and other regulatory frameworks

The validation team further confirms that the project activity does not fall in the list of projects or activities requiring environmental impact assessment. Hence the project complies with relevant local, regional and national laws, statutes and regulatory frameworks. The proposed large scale grouped project has not been rejected under any other GHG programs.

Participation under other GHG programs:

The proposed project is an energy efficiency project activity and is located in a non-Annex I country. Therefore, the ER generated would not be part of an emission trading program, nor it is located in a jurisdiction or sector with binding limits. The project proponent intends to claim carbon credits under the VCS programme only for the emission reductions achieved. The PP states in the VCS Joint PD & MR that the emission reductions generated by this project will not be used for compliance with an emission-trading program or to fulfil binding commitments. In fact, at the time of validation, no binding targets have been set by Tanzania under the Kyoto protocol, as indicated in the UNFCCC website /B04/.

The project proponent has declared that the project is not in registration under any other GHG program. The validation team has checked the UNFCCC database of registered projects or projects under validation and was able to confirm that the listed projects are not the proposed project activity.

The proposed project activity instances do not generate another form of environmental credit. The project proponent indicates in the VCS Joint PD & MR that the project does not intend to generate any other form of GHG related environmental credit other than those claimed under this VCS project.

Commercially sensitive information

There is no Commercially Sensitive Information excluded from the VCS-PD. PP has also clearly stated the contributions to sustainable development in regards with economic sustainability, environmental sustainability, social sustainability and technological sustainability under section 1.17 of the VCS PD & MR /01-e/.

The validation team concludes that the description in the project description is accurate, complete, and provides an understanding of the nature of the project.

3.2 Participation under Other GHG Programs

It has been confirmed through the description in VCS Joint PD & MR /01-e/ and through interviews that the project activity does not participate in any emission trading program or any other GHG program and has not sought or received any other form of environmental credit. The project has applied only under VCS for registration. The project is not participating under any other GHG programs.

3.3 Safeguards

3.3.1 No Net Harm

As identified by PP in section 2.1 of the VCS Joint PD & MR /01-e/, the project has no negative impact.

The validation and verification team confirms that for the project does not pose any potential negative environmental and socio-economic impacts. A local stakeholders meeting was conducted for the project and there was no negative feedback.

3.3.2 Local Stakeholder Consultation

The local stakeholder consultation meetings were held on 22-April-2022 as provided in the section of 2.2 of the VCS joint PD & MR /01-e/ which was verified by the VVB.

The Project Proponent has reported its feedback and grievance redressal procedure in Section 2.2 of the VCS joint PD & MR /01-e/, and the policy is outlined in the document “Project Grievance Redress Mechanism” /18/. In the opinion of the assessment team, based on the onsite inspection interviews and observations, the grievance redressal procedure will address issues that may arise during project planning and implementation.

The grievance redressal process has been designed where beneficiaries and stakeholders have PP contact information and the understanding that they should contact the organization with any problems, questions, or grievances.

During the onsite inspection interviews and based on document review /01/, /25/, it can be confirmed that grievance addressal procedure has been designed and is implemented according to section 2.2 of the VCS Joint PD & MR /01-e/ and that it is effective in its aim.

VVB confirms the procedure and method for engagement, method for documenting the outcomes of local stakeholders’ consultation and account of all inputs received. VVB confirms that the project proponent has taken due account of all input/ feedback received during the monitoring process (positive or negative) have been compiled in the survey results spreadsheet/08/, this has been checked by the verification team during the onsite inspection interviews. Hence VVB deemed the local stakeholders ongoing communication as appropriate.

3.3.3 Environmental Impact

No negative environmental impacts have been identified from the project and Environment Impact Assessment is not required for the project.

3.3.4 Public Comments

The public commenting period for the project was from 27-May-2022 to 26-June-2022. No public comments were received for the project.

3.3.5 AFOLU-Specific Safeguards

This is a non-AFOLU project and hence this section is not applicable.

3.4 Application of Methodology

3.4.1 Title and Reference

The Project provides for projects that use one of the VCS approved methodology:

- VMR0006. “Methodology for Installation of High Efficiency Firewood Cookstoves, (Version 1.1)”
- TOOL 01. Tool for the demonstration and assessment of additionality V07.0.0
- TOOL 30 Calculation of the fraction of non-renewable biomass EB 108 Annex 11 v4.0

3.4.2 Applicability

Table 03: The applicability criteria of the applied methodology VMR0006 version 1.1 is justified as below:

Applicability criterion	How the project complies	Means of validation
The project stove is a single pot or multi pot portable or an in-situ cookstove using only woody biomass; Additional requirement to demonstrate that the biomass used is solely renewable biomass in case project activities replacing baseline stoves using fossil fuel	The proposed instances will distribute high efficiency improved cook stove for thermal application, which will replace inefficient traditional cookstove leading to saving of non-renewable biomass. The ICS to be distributed under the project activity is Smart home pro – Community Carbon stove. All ICS in this project will replace existing traditional stoves; therefore, no greenfield installations are included. Further, the project activity will utilize only non-renewable biomass under project scenario. This criterion will be checked from data	VVB through document review and onsite visit interviews can confirm that the ICS distributed are single pot portable cookstove. VVB has reviewed the manufacturer specification /05/ which confirms that the ICS distributed to the end users has 37.9% thermal efficiency. Hence the ICS replaces the traditional inefficient cookstove thus leading to saving of non-renewable biomass. Thus, the eligibility criteria has been met for the new project activity instances under this group project.

	recorded on the baseline stove used prior to ICS installation. Evidence – Baseline Scenario/Manufacture specification.	
Project activities shall be implemented in domestic premises or in community-based kitchen	The proposed project involves deployment of ICS only in households i.e., domestic premises.	VVB through document review and onsite visit interviews can confirm that the ICS and other stove models will be distributed in the households thereby confirming the methodology applicability condition.
The project stove shall have specified high-power thermal efficiency of at least 25% per the manufacturer's specifications and shall exclusively use woody biomass and can be single pot or multi-pot;	Improved Cookstoves planned to be distributed under this project are Smart Home Pro stove that have an efficiency of 37.9% as per the manufacturer's specifications. The proposed instances does not involve replacement of fossil fuel-based stoves.	VVB has reviewed the manufacturer specification /05/ which confirms that the ICS distributed to the end users has 37.9% thermal efficiency. This meets the criteria of at least 25% as per the applied methodology. This is deemed appropriate to the VVB. Thus, the eligibility criteria has been met for the new project activity instances under this group project.
Both 'Projects' and 'Large Projects' can use the methodology	Estimated average annual emission reductions for the grouped project activity are greater than 300,000 tonnes CO ₂ e per year. Therefore, proposed project qualifies the "Large Projects" criteria..	VVB through document review and onsite visit interviews can confirm that the ICS will only be distributed in the households and each ICS distributed under this project will be considered as project activity instance. The average annual GHG emission reduction for the project is more than 300,000 tCO₂ (i.e., 933,092 tCO₂) and hence the project is large project as per VCS.
Non-renewable biomass has been used in the project region since 31	Proof that biomass has been used in the project region, i.e., in the host country Tanzania since 31	The validation team reviewed the FOA Global Forest Resources Assessment 2020 Country Reports, which

December 1989, using survey methods or referring to published literature, official reports, or statistics;	December 1989 is available through widespread documentation.	demonstrates the use of Non-renewable biomass since 1989 in Tanzania. This is deemed appropriate to the Validation team. Thus, the eligibility criteria has been met for the new project activity instances under this group project.
For the specific case of biomass residues processed as a fuel (e.g. briquettes, wood chips), it shall be demonstrated that: a. It is produced using exclusively renewable biomass (more than one type of biomass may be used) b. The consumption of the fuel should be monitored during the crediting period c. Energy use for renewable biomass processing (e.g. shredding and compacting in the case of briquetting)	Not applicable as project activity uses non-renewable biomass as a fuel. The ICS is introduced as energy efficiency measure to replace baseline stoves and reduce the use of non-renewable biomass for combustion.	Not applicable
The VCS JOINT PD & MR shall 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) The above criteria is as per below VCS meth requirement and para 7 of latest version of meth AMS II.G version 12 is followed. (Additionally, applicability criteria numbers 8 and 9 set out in Section 2.2 of AMS II.G, version 11.1 shall apply)	Each ICS in this project instance will be identified by a unique combination of customer name and geographical location, as well as a serial number. The serial number will be a unique number which will allow for a clear distinction between the stoves. No individual serial number can be repeated within the project, thus ensuring that each stove is counted only once in the proposed project. In addition, the	VVB by means of onsite visit audit interviews confirms that the proposed method for distribution of project devices includes the method to avoid double counting of emission reductions such as unique identifications of product, end-user details (name, address etc) and unique GPS referenced location (if available). Therefore, VVB confirms that the record keeping system will eliminate double counting.

	project has been cross-checked against other CDM project activity operating in the country using the UNFCCC, the Gold Standard, and other relevant voluntary carbon schemes to ensure that the ICS is not included in any other CDM project activity or voluntary project activity.	
The VCS JOINT PD & MR 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. The above criteria is as per below VCS meth requirement and para 8 of latest version of meth AMS II.G version 12 is followed. (Additionally, applicability criteria numbers 8 and 9 set out in Section 2.2 of AMS II.G, version 11.1 shall apply)	The stove manufacturers/wholesale providers/end users shall sign an undertaking stating clearly that the PP or an entity authorized by it shall be the sole owner of the VCU's arising from the project	The validation team by means of onsite audit interviews and the review of sample beneficiary (end-user) undertaking /06/,/19/ confirms that the proposed procedures prevent double counting of emission reductions. Thus, the eligibility criteria has been met for the new project activity instances under this grouped project.

3.4.3 Project Boundary

The Project boundary is defined as per VMR0006. "Methodology for Installation of High Efficiency Firewood Cookstoves, (Version 1.1)".

The sources of greenhouse gas identified in the Joint PD & MR /01/ are deemed to be appropriate and assessed below:

Table 04: Project Boundary

Source		Gas	Included?	Justification/Explanation
Baseline	No other source identified	CO ₂	Yes	Important source of emissions released during partial or incomplete combustion of fuel.
		CH ₄	Yes	Important source of emissions released during partial or incomplete combustion of fuel.
		N ₂ O	Yes	Important source of emissions released during partial or incomplete combustion of fuel.
		Other	No	No other source identified
Project	No other source identified	CO ₂	Yes	Important source of emissions released during partial or incomplete combustion of fuel.
		CH ₄	Yes	Important source of emissions released during partial or incomplete combustion of fuel.
		N ₂ O	Yes	Important source of emissions released during partial or incomplete combustion of fuel.
		Other	No	No other source identified

the greenhouse gas sources indicated in the VCS PD section 3.3 /01/ are transparently stated and deemed appropriate and consistent with the technology used within the project boundary

The project boundary consists of the physical, geographical locations of the distributed ICS limited to Tanzania. This includes: “The Nonrenewable biomass used by the project cooking system”. The validation team also confirms the selected sources, sinks, and reservoirs.

3.4.4 Baseline Scenario

The project activity will use methodology VMR0006 version 1.1. This is the most recent valid version available on the VERRA site at the time of validation. Since the project activity that applies the indicative simplified methodology VMR0006 version 1.1, the baseline scenario for this project activity is the one indicated by this methodology, i.e. “*The baseline scenario is the continued use of non-renewable wood fuel (firewood/charcoal) or fossil fuel (coal/kerosene) by the target population to meet similar thermal energy needs as provided by project cookstoves in absence of project activity.*”. The baseline described in the VCS Joint PD & MR /01/ complies with the requirements of the methodology, as the energy baseline is the existing level of consumption of charcoal by the cooking systems currently in use and which is used in the absence of the project activity.

As per the baseline survey conducted by PP on 110 households covering 10 districts in Tanzania, approximately 34% of the baseline users were using charcoal as their primary source of fuel for cooking, and 61% were using firewood as their primary source of cooking and 4.5% were using other fuel sources for cooking. However, PP has intended to target charcoal users and not the firewood or other fuel users for this project. PP has developed VCS Joint PD and MR/01/, looking at the local manufacturing capability for improved charcoal cookstove for this project. So, PP has conducted KPT on the baseline charcoal. This approach is deemed to be appropriate to the VVB inline with the applied methodology.

VVB based on review of the VCS Joint PD & MR /01-e/ confirms that the documentary evidence used in determining the above baseline scenarios are relevant, and correctly quoted and interpreted in the project description. The baseline scenario for the applied methodology were also confirmed through onsite interviews with the end users of technologies and representatives of PP.

VVB confirms that the baseline scenario opted by the project activity is in accordance with the requirements of the applied methodology /B02-a/ and is justified.

3.4.5 Additionality

The additionality of the project has been demonstrated by the PP as per the methodology section 7 /B02/. PP has demonstrated regulatory surplus in accordance with the rules and requirements regarding regulatory surplus set out in the latest version of the VCS Standard and it can be confirmed that the project is not mandated by any law, statute, or other regulatory framework, or for UNFCCC non-Annex I countries, any systematically enforced law, statute or other regulatory framework. PP has further demonstrated the Project method - Investment analysis “CDM tool for the demonstration and assessment of additionality” V07.0.0” using –option b -Investment Analysis, without the revenue from the sale of Verified Carbon Units (VCUs)” to propose that the project is not financially feasible without the revenue generated from the sales of Verified Carbon Units (VCUs). PP has selected “option 2 Investment Comparison Analysis” with NPV as the financial indicator /12-b/. NPV was chosen as it is a direct assessment of the profitability – and therefore a direct assessment of the financial and economic feasibility of the project. As per VMR0006 requirement only application of the Investment analysis (step 2) is done, no identification and comparison with alternatives to the project activity is produced (step 1).

NPV is calculated in the absence of revenues from carbon finance ($NPV < < 0$), and is calculated with the following parameters:

- An inflated discount rate of 4.4 %¹ (for conservativity purpose).

The NPV is elaborated with the following income and expense sources to establish cash flows:

- Income sources
 - Included: stoves sales
 - Excluded: carbon revenues

Table 05: Parameter included for income sources.

Parameter	Value (USD)	Source/documents/Reference
Stoves Sales cost (425,000 ICS)	312,678	Management Assumption/Sales Receipt

- Expenses sources:
 - Included: stove production/distribution/replacement, community services activities, selected part of direct operational costs (transport and warehousing, software etc....)
 - Excluded (for simplicity purpose, leading to a conservative NPV analysis): selected part of operational costs (salaries etc....), support costs: logistics, administration etc..., certification process costs.

Table 06: Parameter included for expense sources.

Parameter	Value (USD)	Source/documents/Reference
Manufacturing Cost (ICS) – 4,25,000	5,056,126	Purchase Order
Transportation/Distribution Cost	717,181	Management Assumption/Vehicle Rental Invoice
Operation & maintenance Cost	1,199,646	Estimated O & M cost Data Sheet
Data Management & Software Development Cost	285,264	Quotation agreement

The NPV thus calculated is equal to -6,535,903, /12-b/ which clearly demonstrates economic unfeasibility without inflows of revenue from carbon credits.

Therefore, through document review /12/ and onsite interviews with the PP representatives, and the end users regarding the amount paid for cookstove purchase, VVB confirms that the grouped

¹ <https://www.imf.org/en/Countries/TZA>

project is additional, and all the project activity instances that will be included in the grouped project will meet the eligibility criteria. “Community Carbon Efficient Cooking Programme - Tanzania-1” is additional – the emission reductions achieved by the project would be below those that would have occurred without the implementation of the project.

3.4.6 Quantification of GHG Emission Reductions and Removals

The equations and choices provided in the methodology and all other methodological tools are correctly quoted in the VCS Joint PD & MR /01-e/. The emission reductions of the project instances of the project would be calculated using the formulae mentioned in the applied methodology; VMR0006 (version 1.1) /B02-a/.

VVB based on the review of the VCS Joint PD & MR /01-e/, confirms that the formulae are correctly presented for the determination of emissions reductions at project instance level. The parameters and equations presented in the VCS Joint PD & MR /01-e/, as well as other applicable documents, have been compared with the information and requirements presented in the methodology respectively. An equation comparison has also been made to ensure consistency between all the formulae presented in the VCS Joint PD & MR/01-e/ and ER spreadsheet/02/ and methodology VMR0006 (version 1.1) /B02-a/.

The improved cookstove is introduced as energy efficiency measure in the project, therefore equations 1 and 2 of the methodology VMR0006 will be applied to calculate the net GHG emission reductions.

$$ER_y = \sum_i \sum_j ER_{y,i,j} \quad \text{Equation (1)}$$

Where

i	=	Indices for the situation where more than one type/model of improved cookstove is introduced to replace traditional charcoal cookstove
J	=	Indices for the situation where there is more than one batch of improved cookstove of type i .
ER_y	=	Emission reductions during year y in t CO ₂ e
$ER_{y,i,j}$	=	Emission reductions by improved cookstove of type i and batch j during year y in t CO ₂ e

$$ER_{y,i,j} = B_{y,savings,i,j} \times NCV_{wood\ fuel} \times f_{NRB,y} \times (EF_{wf,CO_2} + EF_{wf,non\ CO_2}) \times N_{y,i,j} \times 0.95 \quad \text{Equation (2)}$$

Where:

$B_{y,savings,i,j}$	=	Quantity of woody biomass that is saved in tonnes per improved cookstove of type i and batch j during year y
$f_{NRB,y}$	=	Fraction of woody biomass that can be established as non-renewable biomass (f_{NRB})
$NCV_{wood\ fuel}$	=	Net calorific value of the non-renewable woody biomass that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/tonne)
$EF_{wf,CO2}$	=	CO ₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 tCO ₂ /TJ)
$EF_{wf,non\ CO2}$	=	Non-CO ₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 26.23 tCO ₂ /TJ)
$N_{y,i,j}$	=	Number of improved cookstoves of type i and batch j operating during year y
0.95	=	Discount factor to account for leakage

The quantify of woody biomass saved due to implementation of improved cookstoves to be estimated using equation below;

$$B_{y,savings,i,j} = B_{old} \times \left(1 - \frac{\eta_{old}}{\eta_{new,i,j}}\right) \quad \text{Equation (3)}$$

Where,

$B_{y,savings,i,j}$	Quantity of woody biomass that is saved in tonnes per improved cookstove of type i and batch j during year y
B_{old}	Annual quantity of woody biomass that would have been used in the absence of the project activity (in tonnes per device) to generate useful thermal energy equivalent to that provided by the improved cook stove. The value of B_{old} can be sourced from historical data or baseline surveys. A default wood to charcoal conversion factor of 6 kg of firewood per kg of charcoal may be used in line with paragraph 35 of AMS II.G, version 12. Alternatively, default value of 0.5 t/capita/year may be used.
η_{old}	Efficiency of baseline cookstove
$\eta_{new,i,y}$	Efficiency of the improved cook stove type i and batch j determined through water boiling test (WBT). For this project activity efficiency is measured each monitoring period and annually. Where the project households continue to use baseline cookstoves along with improved cookstoves, B_{old} shall be adjusted ex-post based

on the percentage of project households found to continue such practice according to Equation 6. For such cases, the quantity of woody biomass saved $B_{y,savings,I,j}$ due to implementation of improved cook stoves shall be calculated using an adjusted value to account for ex-post use of baseline stoves in addition to improved cookstove

B_{old} is adjusted to account for continued baseline stove usage using the following equation:

$$\beta_{old,adjusted} = \beta_{old} (1 - \mu_y) \quad \text{Equation (6)}$$

Where:

$B_{old,adjusted}$	Adjusted B_{old} to account the ex post usage of charcoal in baseline cookstove(s) by project households in addition to improved cookstove (in tonnes per device)
μ_y	Baseline stove usage factor to account for use of baseline cookstoves. along with improved cookstoves

Assessment of $f_{NRB,y}$

PP has calculation of f_{NRB} as per CDM Methodological Tool: “Calculation of fraction of non- renewable biomass” (v04.0). Validation team confirms that it has checked f_{NRB} calculation report from Assessment for Democratic Republic of Tanzania/spread sheet /11/ prepared by PP.

As per the applied methodological tool, In the case of ex ante calculation of f_{NRB} , the parameter f_{NRB} shall be estimated using the most recent historical year for which data is available. Review of f_{NRB} report /11/ prepared by PP revealed that all the data used for the calculation is latest available data at the time of validation.

Review of f_{NRB} calculation report/spread sheet /11/ prepared by PP reveals that the estimation of non-domestic fuel consumption was derived from the UN Statistics Division wood consumption and population statistics, in combination with the national average per capita woody biomass consumption. The non-domestic fuelwood consumption estimates provided by the UN Statistics Division have been conservatively applied, disregarding the additional deforestation likely occurring as a result of shifting agriculture and from informal or illegal harvesting. Other categories of non-domestic consumption reported by UN Statistics Division have been conservatively excluded due to apparent double accounting with domestic consumption. The total woody biomass consumption for

Tanzania is as per the f_{NRB} report /11/ prepared by PP is estimated to be 38,729,373 t/yr, which is deemed appropriate to the VVB.

As no woody cover was excluded from the analysis based on a threshold of minimum cover, disaggregation into the FAO forest categories would have been superfluous. The woody cover was disaggregated according to the FAO global ecological zones and the total woody cover extent was calculated for each ecological zone, within the protected areas and within areas that are either accessible or geographically remote. The woody cover is estimated as a percentage for the whole country within 30 x 30 m resolution grid cells. The woody cover extent for each cell is therefore calculated as the woody cover percentage multiplied its area (0.09 ha).

The default age-weighted mean annual increment (MAI) estimates of each ecological zone, as reported by the IPCC, was used for the study, checked and confirmed by the VVB. The proportion of forest stand ages above and below 20 years old were estimated for each ecological zone by extrapolating the observed forest gain extents between 2000 and 2012 to a 20-year period. Where primary forest growth rates are available, they were applied based on the primary forest extent data published by Turubanova et al. The resulting average MAI estimates for Tanzania are 0.22.

As per paragraph 13 of the Tool 30 version 03.0,

“If the f_{NRB} value is estimated at the national level, as a cross check, project proponent shall compare the value of estimated NRB with the product of: i) total average above ground biomass tonnage of the area of forest areas deforested in recent past (tonnes/ha), and ii) most recent available observed annual rate of deforestation (ha/yr). If the estimated NRB value is more than 10% above the value calculated as per the product of biomass and deforestation rate, justification shall be provided for the higher value for NRB.”

CC IPL based on review of f_{NRB} report prepared by PP /11/ confirms that the above requirement of tool 30 has been followed and the justification has been provided, which is deemed acceptable to the validation team. The excerpt of f_{NRB} report /11/ is as below:

“The resulting non-renewable biomass (NRB) value was compared 35,619,037”

Table 07: Fraction of non-renewable biomass (f_{NRB}) calculation for Tanzania:

Parameter	Value	Source
Total Woody biomass consumption (t/yr) (H)	38,729,373	Energy Statistics Database of United Statistics Division; http://data.un.org/Data.aspx?q=fuelwood&d=EDATA&f=cmID%3aFW
Renewable biomass (t/yr) (RB)	3,110,336	Global Forest Resources Assessment 2020 Report, Tanzania, Page 12, Rome 2020.

		Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Local study (in accordance with section 3.2 para 19 of the TOOL30, v4.0)
Non-renewable biomass (t/yr) (NRB)	35,6,19,037	Calculated (Equation 2 of CDM tool 30, v04.0)
Fraction of non-renewable biomass	0.91	Calculated (Equation 1 of CDM Tool 30, v04.0)

$$fNRB = NRB / (NRB + RB)$$

Where:

$fNRB$ = Fraction of non-renewable biomass in the applicable area in the relevant period (fraction or %)

NRB = Quantity of non-renewable biomass consumed in the applicable area in the relevant period (tonnes)

RB = Quantity of renewable biomass that is available on a sustainable basis in the applicable area in the relevant period (tonnes)

$$NRB = H - RB$$

where,

H = Total consumption of woody biomass in the applicable area in the relevant period (tonnes)

$$H = HW \times N + CE + NE$$

Where:

HW = Average consumption of wood fuel per household, including fuelwood and charcoal, in the applicable area in the relevant period (tonnes//household)

CE = Commercial woody biomass consumption for energy applications (e.g. commercial, industrial or institutional uses of woody biomass in ovens, boilers etc.) that are extracted from forests or other land areas in the applicable area in the relevant period (tonnes)

NE = Commercial woody biomass consumption for non-energy applications (e.g. construction, furniture) that are extracted from forests or other land areas in the applicable area in the relevant period (tonnes)

N = Number of households consuming wood fuel within the applicable area in the relevant period (number)

$$RB = \sum(MAI_{forest,i} \times (F_{forest,i} - P_{forest,i})) + \sum(MAI_{other,i} \times (F_{other,i} - P_{other,i}))$$

Where:

$MAI_{forest,i}$ = Mean Annual Increment of woody biomass growth per hectare in subcategory i of forest areas in the relevant period (tonnes/ha/yr)

$MAI_{other,i}$ = Mean Annual Increment of woody biomass growth per hectare in subcategory i of other land areas in the relevant period (tonnes/ha/yr)

$F_{forest,i}$ = Extent of forest in sub-category i in the relevant period (ha)

$F_{other,i}$ = Extent of other land in sub-category i in the relevant period (ha)

$P_{forest,i}$ = Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within forest areas (in subcategory i) in the relevant period (ha)

$P_{other,i}$ = Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within other land areas (in sub-category i) in the relevant period (ha) i = Sub-category i of forest areas and other land areas.

The third party has referred to latest "Official statistics or reports or peer-reviewed literature" for deriving the f_{NRB} value for Tanzania. Detailed calculations have been provided in the f_{NRB} calculation sheet /11/.

PP has provided the f_{NRB} calculation sheet and report in line with the TOOL30, v03.0). Validation team has checked the above calculation/11/and the calculation deemed to be appropriate.

The difference between woody biomass consumption and renewable biomass is considered to be non-renewable. Non-renewable biomass utilisation in Tanzania is, therefore, validated as 35,619,037 t/yr. The fraction of non-renewable biomass is the quotient of the non-renewable and the total biomass. The fraction of non-renewable biomass for Tanzania is, therefore, validated as 0.91.

From the review of this report/spread sheet /11/ and interviews with the PP, validation team's confirms the following:

- The report has been prepared by third Party
- The detailed methodology (including the calculation) of conducting the study has been provided in the report /spread sheet /11/.
- The study has been done in accordance with the CDM Methodological Tool: "Calculation of fraction of non- renewable biomass" (v04.0) including the equitation used and the data source as required by the tool.
- All the reference and data source used for the calculation/study has been listed and assessed by the VVB.

In the opinion of validation team, the calculation of f_{NRB} is correct and in line with the CDM Methodological tool: Calculation of the fraction of non-renewable biomass (v04.0) and thus acceptable to the validation team.

This project would achieve an estimated total emission reduction of 6,531,645 tCO₂e in the 07-year crediting period and an average of 933,092 tCO₂e per year, during this monitoring period 22-April-2022 to 31-August-2022 the total emission reduction achieved is 1,193 tCO₂ as indicated in the VCS Joint PD & MR /01-e/ and also in the ER spread sheet /02/.

In conclusion, all values used in the VCS Joint PD & MR to calculate emission reductions are considered reasonable in the context of the proposed project “Community Carbon Efficient Cooking Programme - Tanzania-1” and calculation approach is correct.

3.4.7 Methodology Deviations

No methodology deviations have been applied to the project activity.

3.4.8 Monitoring Plan

The project employs baseline and monitoring methodology namely VMR0006, version 1.1 /B02-a/. According to section 6.1 and 6.2 of VCS Joint PD & MR /01-e/ the parameters determined ex-ante and those to be monitoring ex post as per the requirements of the methodology are given below.

The following parameters are determined ex-ante and mentioned in section 6.1 of the PD.

Table 08: Parameters Determined ex-ante

Parameter	Unit	Value	Assessment
$f_{NRB,y}$	Fraction	0.91	-Fixed ex-ante
$NCV_{wood\ fuel}$	TJ/tonne	0.0156	- Fixed ex-ante - Default values from the 2006 IPCC Guidelines have been used.
$EF_{wf,CO2}$	tCO ₂ /TJ	112	- Fixed ex-ante - Default values from the 2006 IPCC Guidelines have been used.
$EF_{wf,non\ CO2}$	tCO ₂ /TJ	26.23	- Fixed ex-ante - Default values from the 2006 IPCC Guidelines have been used.
η_{old}	Fraction	0.20	- Fixed ex-ante - Default values from the methodology.

B _{old}	Tonnes/yr/HH	Charcoal – 4.4 tonnes/year/ICS (Fuelwood equivalent)	- Fixed ex-ante -Value calculated as per VMR0006 v1.1, section 8.4 option b - Where charcoal is used by baseline devices, a default wood to charcoal conversion factor of 6 Kg of firewood per kg of charcoal may be used in line with paragraph 35 of AMS II.G, version 12. -110 households randomly selected for the baseline survey from 10 districts of Tanzania (comprising of urban, and rural areas). Baseline KPT was conducted as per the KPT protocol as per section 6.1 of the Joint PD and MR /01-e/. For KPTs, 45 HHs were selected randomly which used Charcoal as a primary fuel
η_p	Fraction	0.379	- Fixed ex-ante -Manufacturer specifications

The following parameters are determined ex-ante and mentioned in section 6.2 of the PD.

Table 09: Parameters monitored ex-post.

SI No.	Parameters/01/	Description/01/	Frequency
1	$N_{y,i}$	Number of equivalent project devices of age group i, operating during year y.	Biennial
2	$\eta_{new,i,y}$	Efficiency of the improved cookstove type i and batch j determined through water boiling test (WBT) during year y	Annually
3	μ_y	Adjustment to account for any continued use of pre-project devices during the year y	Biennial

In accordance with section 3.25.1 of the VCS Standard (version 4.4) /B01-a/ all documents and records will be kept in a secure and retrievable manner for at least two years after the end of the project crediting period. The data collecting and management methods as provided in section

5.3 of the VCS Joint PD & MR /01-e/ are acceptable to the validation and verification team. The validation and verification team interviewed representatives of PP and it was established that the database of all the project equipment distributed by PP is created and maintained. The entire database will be kept with protected by PP for a period of more than two years. In addition, a two samples of equipment invoices were studied and was found to contain information in compliance with the monitoring requirements of the methodology VMR0006 (version 1.1) /B02-a/.

The validation team considers that the means of implementation of the monitoring plan, including the data management, monitoring equipment and quality assurance and quality control procedures, are sufficient to ensure that the emission reductions achieved by/resulting from the proposed project therein can be reported ex post and verified. In addition, the sampling plan meets the requirements of the monitoring methodology VMR0006 (version 1.1) /B02-a/ and the Standard of Sampling and Surveys of CDM project activities and Programme of Activities (version 09.0) /B04-a/ and Guidelines for sampling and surveys for CDM project activities and Programme of Activities (version 04) /B04-b /.

Validation team confirms that the overall monitoring plan complies with the requirements of the methodology VMR0006 (version 1.1) /B02-a/, the monitoring arrangements describes in the monitoring plan are feasible within the project design and the project proponents will be able to implement the described monitoring plan.

3.5 Non-Permanence Risk Analysis

This is not applicable to the project activity as the Project is not an AFOLU (Agriculture, Forestry and Other Land Use) project.

4 VERIFICATION FINDINGS

4.1 Accuracy of GHG Emission Reduction and Removal Calculations

The equations and choices provided in the methodology and all other methodological tools are correctly quoted in the VCS Joint PD & MR /01-e/. The emission reductions of the project instances of the project and project activity instance are calculated using the formulae mentioned in the applied methodologies; VMR0006 version 1.1/B02-a/. The verification team has reviewed the emission reduction spread sheets (ER sheets) and checked all the formulae and found they are correct and are in accordance with the monitoring plan of the VCS Joint PD and MR/01/ and the applied monitoring methodology.

According to applied methodology VMR0006 (version 1.1) /B02/the emissions are calculated as below:

Emission Reduction

$$ER_y = \sum_i \sum_j ER_{y,i,j} \quad \text{Equation (1)}$$

Where:

- i = Indices for the situation where more than one type/model of improved cookstove is introduced to replace traditional charcoal stoves.
- j = Indices for the situation where there is more than one batch of improved cookstove of type i
- ER_y = Emission reductions during year y in t CO₂e
- $ER_{y,i,j}$ = Emission reductions by improved cookstove of type i and batch j during year y in t CO₂e

$$ER_{y,i,j} = B_{y,savings,i,j} \times NCV_{wood\ fuel} \times f_{NRB,y} \times (EF_{wf,CO_2} + EF_{wf,non\ CO_2}) \times N_{y,i,j} \times 0.95 \quad \text{Equation (2)}$$

Where:

- $B_{y,savings,i,j}$ = Quantity of woody biomass that is saved in tonnes per improved cookstove of type i and batch j during year y
- $f_{NRB,y}$ = Fraction of woody biomass that can be established as non-renewable biomass (fNRB)
- $NCV_{wood\ fuel}$ = Net calorific value of the non-renewable woody biomass that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/tonne)
- EF_{wf,CO_2} = CO₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 tCO₂/TJ)
- $EF_{wf,non\ CO_2}$ = Non-CO₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 26.23 tCO₂/TJ)
- $N_{y,i,j}$ = Number of improved cookstoves of type i and batch j operating during year y
- 0.95 = Discount factor to account for leakage

The quantify of woody biomass saved due to implementation of improved cookstoves to be estimated using equation below:

$$B_{y,savings,i,j} = B_{old} \times \left(1 - \frac{\eta_{old}}{\eta_{new,i,j}}\right) \quad \text{Equation (3)}$$

Where

$B_{y,savings,i,j}$	Quantity of woody biomass that is saved in tonnes per improved cookstove of type i and batch j during year y
B_{old}	Annual quantity of woody biomass that would have been used in the absence of the project activity (in tonnes per device) to generate useful thermal energy equivalent to that provided by the improved cook stove. B_{old} is based on a baseline survey.
η_{old}	Efficiency of baseline cookstove
$\eta_{new,i,y}$	Efficiency of the improved cook stove type i and batch j determined using Equation 5 of the methodology.

B_{old} is adjusted to account for continued baseline stove usage using the following equation:

$$\beta_{old,adjusted} = \beta_{old} (1 - \mu_y) \quad \text{Equation (6)}$$

Where

$B_{old,adjusted}$	Adjusted B_{old} to account the ex post usage of charcoal in baseline cookstove(s) by project households in addition to improved cookstove (in tonnes per device)
μ_y	Baseline stove usage factor to account for use of baseline cookstoves along with improved cookstoves

Sampling approach: -

As assessed in this section, emission reductions for the project “Community Carbon Efficient Cooking Programme - Tanzania-1” have being claimed for this monitoring period and the total population of the stoves for this monitoring period (22-April-2022 to 31-August-2022) is 2,759 ICS out of which 2,653 ICS found operational. and the total emission reductions and removals achieved 1,193 tCO₂e.

The sampling plan implemented by the PP is in accordance with the applied approved monitoring methodology /B02/ and the VCS Joint PD & MR /01-e/. The PP has appropriately performed simple random sampling procedure, reliability levels were set at 95% confidence and 10% precision which in line with the applied methodology VMR 0006 version 1.1/B02/..

The sampling surveys have been carried out by the well-trained personnel /13/. Monitoring parameters $N_{y,j,j}$, $\eta_{new, i, y}$ and $\mu_{y, i, j}$ are monitored through monitoring sample surveys. Monitoring of the parameters ensures compliance with the applied methodology VMR0006, version 1.1 /B02/. VVB has checked the survey records /08/. Parameter $N_{y,j,j}$, $\eta_{new, i, y}$ monitors the number of stove in operation and the parameters μ_y Adjustment to account for any continued use of pre-project devices during the year y .

VVB use sampling during verification for checking the operational status in the households. The sampling done by VVB reflects the population of the project activity. applying paragraph 39 (c) of the sampling standard, version 09 /B04/, a sample size of 11 ICS was chosen (with no discrepant records). A sample size of 11 each was determined for both the districts, based on an AQL of 0.5% and UQL of 20%, producer risk 10% and consumer risk 10%. Acceptance number (c) thus determined for the sample is 0. VVB interviewed 11 samples from monitoring survey and 11 from baseline survey. It was observed that out of the 11 samples from baseline survey matches the PP records, and all the 11 stoves from the monitoring survey were found to be operational, and this matched with the PP's records and hence no discrepant records were observed with the VCS Joint PD & MR /01-e/ and ER sheets /02/ and thus $c=0$. Thus, PP's set of records has been accepted in line with § 33 of the sampling standard, version 09 /B04/. The verification team has cross verified these sample documents.

The monitoring parameters to be monitored through the sampling plan are:

1. Number of project devices operating during year y ($N_{y,j,j}$)
2. Adjustment to account for any continued use of pre-project devices during the year y (μ_y)
3. Efficiency of the improved cookstove type i and batch j determined through water boiling test (WBT) during year y ($\eta_{new, i, y}$)

Simple random sampling was applied by the PP for selection of the monitoring samples and 130 sampling units were selected out of 2,759 ICS which is deemed acceptable as per the VCS Joint PD - MR /01-e/.

On site assessment of Monitoring parameters (namely μ_y and $N_{y,i,j}$) was conducted based on following two methods:

- Confirmation with the household/end user whether or not the PP has performed monitoring/measurement campaign (or parameter μ_y) and survey on stove operation (for the parameter $N_{y,i,j}$).
- Assessment of Competence of personnel involved in conducting standardized tests viz., μ_y and surveys: Verification team has reviewed the abilities, qualifications and recognition of involved personnel and institutions of the measuring team involved in the μ_y . The verification team based on the onsite inspection interviews confirms that the team was

qualified to carry out the μ_y in line with the methodology.

- Confirmation with the household/end user whether or not the PP has performed monitoring/measurement campaign for determining the thermal efficiency ($\eta_{new, i, y}$) through WBT.

During the onsite interviews with PP's representative, VVB was able to understand the process in line with the methodology VMR 0006 version 1.1/B02-a/ and the PP monitoring procedure in line with the VCS Joint PD & MR /01-e/.

It is worth to note here that PP has selected the same households for both parameters above and for the same reason, VVB's sample for acceptance sampling was the same for both the parameters. VVB could verify the original survey forms /07/ and data/information flow to sampling sheet and ER spread sheet/02/. No discrepancy was found in the data/information flow. As per the section 2.3 above the end users were not interviewed in a single day. Hence, the survey process deemed acceptable to the verification team.

Furthermore, the database /09/ and sample sales invoice /15/ was also checked/cross verified to confirm the number cookstoves for the parameter $N_{y,i,j}$.

As per paragraph 25 of the Sampling Standard, version 09 /B04/, the verification team has to verify whether the project participants entity have implemented the sampling and surveys according to the sampling plan in the registered monitoring plan. The verification includes determining:

- (a) Whether the required confidence/precision has been met
- (b) Whether the selected sample was representative of the population.

As per the applied methodology VMR0006 version 01.1 section 9.2 /B02/. The necessary confidence / precision of 95/10 each of the parameters are met. This has been cross verified by the verification team from the supporting documents submitted/14/.

Emission reductions have been calculated in accordance with the applied methodology VMR0006 version 1.1 /B02-a/. The PP has used monitored data and ex-ante fixed data including default values as mandated/permitted by the applied methodology. The values used for calculation of GHG emission reductions have been thoroughly checked by the verification team and was found appropriate and correct. The Parameters Determined ex-ante is listed in section 6.1 of this Joint validation and verification report. The spread sheet submitted by the PP clearly and transparently mentions values of the data parameters used for calculation of emission reductions. The input values have been verified from the reliable and authentic sources including monitoring records (distribution records) /09/, VCS Joint PD & MR /01/, and applied methodology /B02/. The emission reductions calculated were compared with the emission reduction spread sheet /02/ and found to be correct. No significant reporting risks have been identified for the data reported.

The details of monitoring parameters used for calculation of emission reductions are provided below:

Table 10: Parameters monitored ex-post

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Data / Parameter: (as in monitoring plan of VCS JOINT PD & MR):	Number of equivalent project devices of type i and batch j operating during year y. ($N_{y,i,j}$)
Measuring frequency/Time Interval:	Biennially
Reporting frequency:	Biennially
Reported value:	2653 (Total operational stoves)
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	Value obtained from monitoring survey of samples /08/ and data base/09/.
Is accuracy of the monitoring equipment as stated in the VCS JOINT PD & MR? If the VCS JOINT PD & MR VVBs not specify the accuracy of the monitoring equipment, VVBs the monitoring equipment represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of the VCS JOINT PD & MR? If the VCS JOINT PD & MR VVBs not specify the frequency of calibration, VVBs the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in VCS Joint PD & MR /01-e/
Company performing the calibration (internal or external calibration):	NA

Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in VCS Joint PD & MR /01-e/ has been compared with monitoring survey records /08/ and the ER sheet /02/. The total number of cook-stove has been cross checked with the database /09/ and commissioning certificate /04/ as provided by the PP. VVB confirms here that onsite assessment of Monitoring parameter $N_{y,i,j}$ was conducted based on following two methods: ➤ Confirmation with the household/end user whether or not the PP has performed monitoring/measurement campaign, survey on stove operation (for the parameter $N_{y,i,j}$). ➤ Assessment of Competence of personnel involved in conducting the survey/13/
How were the values in the monitoring report verified?	The values have been verified through project database and monitoring surveys & found ok.
VVBs the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Data / Parameter: (as in monitoring plan of VCS JOINT PD & MR):	Adjustment to account for any continued use of pre-project devices during the year y (μ_y)
Measuring frequency/Time Interval:	At least once every two years
Reporting frequency:	Annually
Reported value:	0.05
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	Value is calculated in the ER spread sheet /02/ and from monitoring survey /08/
Is accuracy of the monitoring equipment as stated in the VCS JOINT PD & MR? If the VCS JOINT PD & MR VVBs not specify the accuracy of the monitoring equipment, VVBs the monitoring 59racticet represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of VCS JOINT PD & MR? If the VCS JOINT PD & MR VVBs not specify the frequency of calibration, VVBs the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with VCS Joint PD & MR /01-e/
Company performing the calibration (internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA

Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in MR has been compared with the ER sheet /02/.
How were the values in the monitoring report verified?	The value has been verified through monitoring surveys during current monitoring period and found to be ok.
VVBs the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data and reporting of emission reductions and all necessary QA/QC processes are in place.
In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Data / Parameter: (as in monitoring plan of VCS JOINT PD & MR):	$\eta_{new,i,j}$
Measuring frequency/Time Interval:	Annual
Reporting frequency:	Annual
Reported value:	Smart Home Pro – 34.55% (current monitoring period)
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes

Details of monitoring equipment:	Value obtained from WBT results /21/ for the current monitoring period and found to be ok.
Is accuracy of the monitoring equipment as stated in the VCS JOINT PD & MR? If the VCS JOINT PD & MR VVBs not specify the accuracy of the monitoring equipment, VVBs the monitoring equipment represent good monitoring practise?	NA
Calibration frequency /interval: Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification	NA
Is the calibration interval in line with the monitoring plan of the VCS JOINT PD & MR? If the VCS JOINT PD & MR VVBs not specify the frequency of calibration, VVBs the selected frequency represent good monitoring practise?	NA. QA/QC procedures stated in MR comply with VCS Joint PD & MR /01-e/
Company performing the calibration (internal or external calibration):	NA
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	NA
Is (are) calibration(s) valid for the whole reporting period?	NA
If applicable, has the reported data been cross-checked with other available data?	Yes, the reported data in MR has been compared with the ER sheet /02//03/.
How were the values in the monitoring report verified?	The value has been verified through WBT results during current monitoring period and found to be ok.
VVBs the data management (from data generation to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes, the data management ensures correct transfer of data from monitoring survey /08/ and reporting of emission reductions and all necessary QA/QC processes are in place.

In case only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, has the most conservative assumption theoretically possible been applied or has a request for deviation been approved?	NA
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VVB confirms that all parameters are used correctly in the calculations, all results are verifiable and transparent, all assumptions are described and based on verifiable evidence and calculations are done in accordance with the pre-defined formulae from registered VCS Joint PD & MR /01-e/. The total number of emission reductions for the monitoring period (22-April-2022 to 31-August-2022) is 1,193 tCO₂e.

The VVB assessment also verifies the aforementioned SDGs, which are covered in the SDVista Validation and verification process.

VVB has checked and confirmed the calculations in the spreadsheet and found to be accurate. The monitoring report is supported by an emission reduction spreadsheet. The consistency and formula were verified and found to be accurate.

4.2 Quality of Evidence to Determine GHG Emission Reductions and Removals

When verifying the report emission reduction, CCIPL ensured that there was a clear audit trail that contained the evidence and records that validate the stated figures. All source documents that form the basis for assumptions and other information underlying the GHG data are shown above.

1. When assessing the audit trails, CCIPL also examined:
2. whether sufficient evidence was available, both in terms of frequency and in covering the full monitoring period
3. the source and nature of the evidence

if comparable information was available from sources other than that used in the monitoring report, CCIPL cross-checked the monitoring report against the other sources to confirm that the stated figures were correct. The sources and the data referenced are shown in Appendix 1.1 and 1.2

below.

CCIPL also assessed that the data collection system met the requirements of the monitoring plan as per the applied methodology.

Proper data management inclusive of data acquisition and aggregation, data management system is being followed for the project activity.

The monitoring personnel at site are well trained and follow reproducible routines. Thus, they are competent to carry out the relevant tasks with sufficient accuracy.

5 VALIDATION AND VERIFICATION OPINION

The Project Participant, Community Carbon, has commissioned the VVB, Carbon Check (India) Private Ltd. to perform a Joint validation and verification of the VCS Project Activity “Community Carbon Efficient Cooking Programme - Tanzania-1”. This report summarizes the findings of the validation and verification of the project, performed on the basis of VCS criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The validation and verification process were performed on the basis of all guidance and criteria as provided in VCS Standard version 4.4 /B01-a/, VCS Program Guide version 4.3 /B01-b/, VCS Validation and Verification Manual version 3.2/B01-c/ and Registration & Issuance Process version 4.3/B01-d/.

The project activity provides the information in VCS Joint PD & MR /01-e/ as required by the VCS Standard /B01-a/ and Validation and Verification Manual /B01-c/ and in Carbon Check’s opinion meets the requirements of the applied baseline and monitoring methodology, VMR0006 version 1.1 /B02/and is likely to achieve the estimated emission reductions. The joint validation and verification have been performed using a risk- based approach, as described above. The expected annual average emission reductions from the project activity are 933,092 tCO₂e and 6,531,645 tCO₂e over the renewable 07 years of crediting period.

Table 11: Estimated GHG emission reductions or removals (tCO₂e)

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
Year 1	276,843
Year 2	709,528
Year 3	1,206,324
Year 4	1,156,931
Year 5	1,108,291
Year 6	1,060,414
Year 7	1,013,314

Total estimated ERs	6,531,645
Total number of crediting years	07 Years
Average annual ERs	933,092

Carbon Check (India) Private Ltd concludes the validation with a positive opinion that the VCS Project Activity “Community Carbon Efficient Cooking Programme - Tanzania-1”, as described in the VCS Joint PD & MR (version 6.0, dated 14-September-2023) /01-e/, meets all the applicable VCS requirements, including those specified in the Project Standard, relevant methodology, tools and guidelines.

The selected baseline and monitoring methodology (VMR0006, Version 1.1) is applicable to the project and correctly applied.

The verification team confirm that the project has been implemented in accordance with the VCS Joint project description & Monitoring report /01-e/.

Monitoring period: From 22-April-2022 to 31-August-2022

Validated or verified GHG emission reductions and removals in the above period.

Table 12: Net GHG emission reductions or removals (tCO₂e)

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2022 (22-April-2022 to 31-August-2022)	1,193	-	-	1,193

Year	Ex-ante emissions reductions/removals	Achieved emissions reductions/removals	Percent difference	Justification for the difference
2022 (22-April-2022 to 31-August-2022)		1,193	(-) 61%	Actual emission reductions achieved are lower than the value estimated in ex-ante calculation. This is mainly because the WBT test value derived from the sampling

				survey testing is lower than the projected value & very small year fraction of VCUs accounting for the project activity instances.
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The verification team is of the opinion that the project has been implemented in accordance with the registered project description, the monitoring plan complies with the approved monitoring methodology. The monitoring was carried out in accordance with the monitoring plan, and that the monitored data and ER calculations were assessed and confirmed to be correct.

Therefore, CCIPL hereby certifies, and requests the issuance of, the reported ERs during the monitoring period of 22-April-2022 to 31-August-2022 amounting to 1,193 tCO₂e to the VCS Registry.

APPENDIX 1.1: REFERENCE DOCUMENTS

Ref	Document
/01/	Joint Project description and Monitoring Report titled: a) “Community Carbon Efficient Cooking Programme - Tanzania-1” version 2.0 dated 22-March-2023 b) “Community Carbon Efficient Cooking Programme - Tanzania-1” version 3.0 dated 02-June-2023 c) “Community Carbon Efficient Cooking Programme - Tanzania-1” version 4.0 dated 22-June-2023 d) “Community Carbon Efficient Cooking Programme - Tanzania-1” version 5.0 dated 24-August-2023 e) “Community Carbon Efficient Cooking Programme - Tanzania-1” version 6.0 dated 14-September-2023
/02/	Ex post estimations sheets a) 03 VCS_2676_ER_Sheet_v1.1 28.04.2023 b) VCS_2676_ER_Sheet_v1.1 3.06.2023 c) VCS_2676_ER_Sheet corresponding/01-d,e/
/03/	Ex ante estimations sheets a) 02 2676 ER sheet Tanzania - Estimated 7.0 v5 (1) 26.04.2023 b) VCS 2676_TZ_Ex-Ante ER_v1 c) VCS 2676_TZ_Ex-Ante ER_v1 22.06.2023
/04/	Evidence for the start date of the project • Grace Zambzi first sale record
/05/	Technical specifications of the stove • SHS Pro Technical Specification
/06/	Proof of right of VERs • Grace Zambzi first sale record
/07/	Monitoring survey questionnaire template • Monitoring forms HH
/08/	Survey records for the monitoring period • Monitoring Survey • Monitoring forms HH
/09/	Database for the ICS distributed. • TZ data April 22 to Aug 22
/10/	Evidence for unique identification of each of the ICS
/11/	fNRB calculation done by third party • fNRB Report-Tanzania • Tanzania fNRB calculations

/12/	Investment Comparison analysis with NPV as financial indicator a) VCS 2676_Additionality Model v1 9.06.2023 – Final b) VCS 2676_Additionality Model v1 922.06.2023 • 01 Invoice Cost • 02 Purchase Order Cost • 03 Data Management & Software Development Cost • 04 Distribution & Transportation Cost • 05 STOVE MAINTENANCE COST GUIDE • 06 Sales Receipt ICS Selling Price
/13/	Training records • Attendance list • photo 1 • photo 2 • photo 3 • photo 4 • photo 5 • photo 6 • photo 7
/14/	Evidence for the random sample selection for the parameters opted for monitoring survey • Monitoring list • random generator ss1 • random generator ss2 • random generator ss3
/15/	Sample sales records/warranty cards for the stove • 06 Sales Receipt ICS Selling Price
/16/	End user consent/Carbon Credit waiver
/17/	Records of the local stakeholder's consultation meeting conducted as per VCS requirement. • Attendance - LSC Tanzania2 • Attendance - LSC Tanzania • LSC Pictures - 20220422_134147 (1) • LSC Pictures - 20220422_134151 (1) • LSC Pictures - 20220422_152122 (1) • LSC Pictures - 20220422_152347 (1) • LSC Pictures - 20220422_152400 (1) • UpE_LSC Feedback
/18/	Grievance Redress Policy & Procedure • Grievance register. • Grievance register copy Tz vcs
/19/	Declaration by PP regarding Scope 3 Supply chain declaration TZ.
/20/	Procedure/provision of ICS maintenance & replacement.

	• Warrantly log book 1 • Warranty for replacement stove • Warranty log book 2
/21/	WBT test and reports • Wbt Tirdo Certification • WBT Report • WBT results • WBT Stove 1- 30 • WBT PHOTO 1 • WBT PHOTO 2 • WBT PHOTO 3 • WBT PHOTO 4
/22/	KPT test and reports • Baseline KPT results • IMG-20230428-WA0011 • IMG-20230428-WA0012 (1) • IMG-20230428-WA0013
/23/	Baseline survey questionnaire template and survey records • Basline all forms
/24/	Calibration records for equipment used during monitoring period. • Certificate of calibration Thermometer • Weighing scale
/25/	• Declaration from the project proponent that the project has not or shall not claim carbon credits any other scheme after Registration of the project under VCS. • Declaration from the project proponent that the project is not creating any other form of environmental credit under any specific program. • Declaration on no double counting, target group, geographical boundaries and distribution mechanism

APPENDIX 1.2: BACKGROUND DOCUMENTS

Ref	Document
/B01/	VCS Requirements - VCS Standard (v4.4, dated 17-January-2023) - VCS Program Guide (v4.3, dated 17-January-2023) - VCS Validation and Verification Manual version (v3.2, dated 19-October-2016) - Registration & Issuance Process (v4.3, dated 17-January-2023) - VCS Program Definitions version (v4.3, dated 21-December-2022) VCS MR template version 4.2 (dated 21-December-2022)

/B02/	Applied baseline and monitoring methodology a. VMR0006. version 1.1, "Methodology for Installation of High Efficiency Firewood Cookstoves"
/B03/	Methodological Tool • CDM Tool 30 "Calculation of the fraction of non-renewable biomass" Version 04.0 • CDM Tool 01 "Tool for the demonstration and assessment of additionality" version 7.0.0
/B04/	a. "Standard for sampling and surveys for CDM project activities and programme of activities" (version 09.0) b. Guidelines for sampling and surveys for CDM project activities and Programme of Activities (version 04)
/B05/	Website and links: 1. IPCC (http://www.ipcc-nggip.iges.or.jp) 2. http://cdm.unfccc.int 3. http://www.v-c-s.org 4. https://www.fao.org/3/cb0032en/cb0032en.pdf

APPENDIX 2: ABBREVIATIONS

CDM	Clean Development Mechanism
BE	Baseline Emission
CAR	Corrective Action Request
CC IPL	Carbon Check (India) Private Ltd.
CDM	Clean Development Mechanism
CL	Clarification Request
CO ₂	Carbon Dioxide
CO _{2e}	Carbon Dioxide Equivalent
DPR	Detailed project report
DVR	Draft Validation Report
EB	CDM Executive Board
EF	Emission Factor
ER	Emission Reduction
FAR	Forward Action Request
FVR	Final validation Report
GHG	Greenhouse gas(es)
GWh	Giga Watt Hour
IPCC	Intergovernmental Panel on Climate Change
MW	Mega Watt
MWh	Mega Watt Hour
NA	Not Applicable
OSV	On Site Visit
PD	Project Description
PP	Project Proponent
QC/QA	Quality control/Quality assurance
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Verified Carbon Standard
VCSA	Verified Carbon Standard Association
VCU	Verified Carbon Unit
VVB	Validation Verification Body
VVM	Validation and Verification Manual

APPENDIX 3: CERTIFICATES OF COMPETENCE



Carbon Check (India) Private Limited

Certificate of Competency

Ms. Pallavi Gedam

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

for the following functions and requirements:

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

in the following Technical Areas:

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

Issue Date

1st January 2023

Expiry Date

31st December 2023



Mr. Vikash Kumar Singh
Compliance Officer



Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023



Carbon Check (India) Private Limited

Certificate of Competency

Mr. NiimaYandu

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

for the following functions and requirements:

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

in the following Technical Areas:

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

Issue Date

03rd May 2023

Expiry Date

02nd May 2024



Mr. Vikash Kumar Singh
Compliance Officer



Mr. Amit Anand
CEO



Carbon Check (India) Private Limited

Certificate of Competency

Ms. Indumathi C

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

for the following functions and requirements:

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

in the following Technical Areas:

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

Issue Date

1st January 2023

Expiry Date

31st December 2023



Mr. Vikash Kumar Singh
Compliance Officer



Mr. Amit Anand
CEO

APPENDIX 4: FINDINGS LOG

Table 1. CARs from this Joint Validation and Verification

Finding	CAR 01		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding (VVB)	As per the VCS template guideline, PP to comply with the date format DD-Month-YYYY throughout the VCS Joint PD MR.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	Project Proponent has revised the date format throughout VCS Joint PD MR in line with VCS template guidelines. Hence Revised VCS Joint PD & MR Version 3.0 .		
VVB Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.</i>	The Project Proponent has provided the revised Joint PD & MR with the changes implemented as per the template guideline. This has been checked and confirmed by the verification team.		
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed		

Finding	CAR 02		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding (VVB)	As per the VCS Joint PD MR template guide section 1.1 Summary Description of the Project –“ <i>For projects undergoing crediting period renewal, include the audit history of the project using the table below. For the project validation, state the validation date in the Period column. This table should include all monitoring periods, including the period of this monitoring report</i> ”. PP to provide the table as per the guideline.		
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The Project proponent has included the details & table inline Joint VCS PD MR template guidelines in the . revised Joint VCS PD MR.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised Joint PD MR with section 1.1 being updated. This has been checked and confirmed by the verification team.		

Finding	CAR 02
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 03
Classification	☒ CAR ☐ CL ☐ FAR
Description of finding (VVB)	In section 1.12- 'Project Location' the Latitude and Longitude provided for Tanzania Lat - 6° 46' 33.6432" S (6.7924° S) Lon – 39° 10' 41.9736" E (39.2083° E). However, the latitude and longitude provided in SDVista PD is 6.369028 (6°22'8.5"S) and 34.888821 (34°53'19.76"E) respectively PP clarify and provide a proper references for the same.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	Project Proponent has made the latitude & longitude information consistent in line with VCS SDVista with proper reference.
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised Joint PD MR with section 1.12 being updated. This has been checked and confirmed by the verification team. Hence this finding is closed.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 04
Classification	☒ CAR ☐ CL ☐ FAR
Description of finding (VVB)	As per §3.22.1 of the VCS standard version 4.4 "Project proponents shall not seek credit for the same GHG emission reduction or removal under the VCS Program and another GHG program. Projects issuing GHG credits under both the VCS Program and another GHG program shall also conform with the rules and requirements set out in the VCS Program document Registration and Issuance Process." And also as per the Joint PD MR template guide section 1.15.1, "Indicate whether the project has been registered or is seeking registration under any other GHG programs. Where the project has been registered under any other

Finding	CAR 04
	GHG program, provide the registration number and details”. PP to update the section according to the VCS standard and VCS Joint PD MR template guideline.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	PP is hereby submitting the declaration confirming that the GHG Emissions reductions or removals generated by the project activity will not be used for compliance with an emission trading program or to meet binding limits on GHG emissions. Project proponent has also updated the same information in the revised Joint VCS PD & MR for the project activity.
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised Joint PD MR with section 1.15.1 being updated. PP has provided evidence stating that it has not been registered under any other GHG program. This has been checked and confirmed by the verification team.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 05
Classification	☒ CAR ☐ CL ☐ FAR
Description of finding (VVB)	As per § 3.17.1 of the VCS standard version 4.4 “<i>The project proponent shall demonstrate how the project activities, or additional activities implemented by the project proponent, contribute to sustainable development, as defined by, and tracked against the United Nations Sustainable Development Goals (SDGs). The project proponent shall demonstrate that a project contributes to at least three SDGs by the end of the first monitoring period, and in each subsequent monitoring period.</i>” PP to update section 1.17.1 as per the VCS standard and Joint PD MR template guideline.
Corrective Action or clarification #1	The project proponent has covered a minimum of 3 SDG requirements in line with VCS Standard Version 4.4 & the

Finding	CAR 05
<i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	same has been included in the Joint VCS PD MR. Hence Revised Joint VCS PD & MR.
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised Joint PD & MR with section 1.17 being updated as per the template guideline and VCS standard version 4.4 requirement. This has been checked and confirmed by the verification team.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 06
Classification	☒ CAR ☐ CL ☐ FAR
Description of finding (VVB)	In section 1.17.2 of the VCS Joint PD MR - 'Sustainable Development Contributions Activity Monitoring' requirement - Table 1: Sustainable Development Contributions' PP is requested to update column # 2 and column #3 with the SDG target and SDG indicator number respectively. Row # 5 of the same table its mentioned as "Quantity of emission reductions achieved from the project activity." However as per the template guide for Joint PD MR it is mentioned as – "While climate change and mitigation activities relate to SDG 13, they do not align with any SDG 13 target. For climate change mitigation impacts, write "13.0" in the SDG target column and use the indicator "Tonnes of greenhouse gas emissions avoided or removed". PP to rectify the same.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	Project Proponent has revised section 1.17.2 of the VCS Joint PD MR in line with VCS template guidelines. Hence Revised Joint VCS PD & MR.
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure,</i>	PP has provided the revised VCS Joint PD and MR with section 1.17.2 being updated in accordance with the template guideline. Changes pertaining to table 1 has

Finding	CAR 06
<i>additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	been implemented in the revised Joint PD & MR which has been checked by the verification team.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 07
Classification	☒ CAR ☐ CL ☐ FAR
Description of finding (VVB)	As per § 3.18.5 of the VCS standard, “The project proponent shall take due account of all and any input received during the local stakeholder consultation and through ongoing communications, which means it will need to either update the project design or justify why updates are not appropriate. The project proponent shall demonstrate to the validation/verification body what action it has taken in respect of the local stakeholder consultation as part of validation, and in respect of ongoing communications as part of each subsequent verification.” PP to update the same in section 2.2 “Local stakeholder consultation” of the Joint PD MR with the procedure for documenting the outcome of the meeting. Any update in the project design done as per input received and resolved during the LSC.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The section 2.2 of the Joint VCS PD MR has been revised to include the details for the ongoing communication & details for the LSC with the grievance register maintained at the site. The stakeholders may comment or provide suggestions for the project. There are no comments received in the current monitoring period.
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised Joint PD and MR with section 2.2 being updated. This has been checked and confirmed by the verification team. Hence this finding is closed.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 08		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding (VVB)	PP to mention tool applicability criteria in section 3.2 of the Joint PD MR as per the VCS joint PD MR template guide. • CDM TOOL01. Tool for the demonstration and assessment of additionality, Clean Development Mechanism • CDM Tool 30 Calculation of the fraction of non-renewable biomass In section 3.2 of the Joint PD MR PP has mentioned that “Non-renewable biomass has been used since 31 December 1989 in Tanzania as demonstrated at below.” However, there is no information in this regard. PP to describe in detail how they demonstrate that non-renewable biomass has been used in the project region since 31 December 1989.		
Corrective Action or clarification #1 (PP shall write a detailed and clear corrective action or further information for clarification as per finding)	The project proponent has included the applicability criteria of TOOL1 & TOOL30 in section 3.2 of the revised Joint VCS PD MR. PP has also demonstrated that non-renewable biomass has been used in the project region since 31 December 1989 in the revised Joint VCS PD MR.		
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised Joint PD & MR with section 3.2 being updated. PP has mentioned the tools applied and also has demonstrated the use of non-renewable biomass in the project region since 31 December 1989. This has been checked and confirmed by the verification team.		
Conclusion Tick the appropriate checkbox	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed		

Finding	CAR 09		
Classification	☒ CAR	☐ CL	☐ FAR
Description of finding (VVB)	In section 3.3 –‘Project Boundary’ of the Joint PD & MR, the image is not clear. PP to rectify the same.		
Corrective Action or clarification #1 (PP shall write a detailed and clear corrective action or further information for clarification as per finding)	Project proponent has revised the image in the section 3.3 of the project boundary in line with VCS template guidelines.		

Finding	CAR 09
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised VCS Joint PD & MR with the changes implemented. This has been checked and confirmed by the verification team. Hence this finding is closed.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 10
Classification	☒ CAR ☐ CL ☐ FAR
Description of finding (VVB)	PP to update section 3.5 – Additionality as per the VCS Joint PD MR template guideline – <i>“Where a project method is applied to demonstrate additionality and the procedure in the applied methodology or tool involves several steps, describe how each step is applied and clearly document the outcome of each step. Indicate clearly the method selected to demonstrate additionality (e.g., investment analysis or barrier analysis in the case of the CDM Tool for the demonstration and assessment of additionality).”</i> PP to clearly mention the steps involved in proving additionality.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The project proponent has demonstrated all the steps involved in the tools with each step-in section 3.5 of the additionality of the revised Joint VCS PD MR. The project proponent will be submitting the NPV sheet to the VCS VVB. .
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised Joint PD & MR with section 3.5 being updated. PP has also submitted the evidences to prove additionality. This has been checked and confirmed by the verification team.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 11
Classification	☒ CAR ☐ CL ☐ FAR

Finding	CAR 11
Description of finding (VVB)	PP to elaborate the following in section 6.3 “Monitoring Plan” as per the VCS Joint PD MR template guide- <i>The methods used for generating/measuring, recording, storing, aggregating, collating and reporting data and parameters. Where relevant, include the procedures for calibrating monitoring equipment.</i> <i>The organizational structure, responsibilities and competencies of the personnel that carried out monitoring activities.</i> <i>The policies used for oversight and accountability of monitoring activities.</i> <i>The procedures used for internal auditing and QA/QC.</i> <i>The procedures used for handling any internal auditing performed and any non-conformances identified.</i> <i>The implementation of sampling approaches, including target precision levels, sample sizes, sample site locations, stratification, frequency of measurement and QA/QC procedures. Where applicable, demonstrate whether the required confidence level or precision has been met.</i> PP to include details about the baseline surveys conducted, data collection procedure electronic/ physical, QA/QC procedure employed for ensuring proper data transfer and storage.
Corrective Action or clarification #1 (PP shall write a detailed and clear corrective action or further information for clarification as per finding)	The project proponent has included all the details (baseline surveys conducted, data collection procedure electronic/ physical, QA/QC procedure) in section 6.3 of the Joint VCS PD & MR in line with VCS template guidelines. Hence Revised Joint VCS PD MR Version 3.0 .

Finding	CAR 11
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised VCS Joint PD and MR with section 6.3 being updated. This has been checked and confirmed by the verification team. Hence this finding is closed.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CAR 12
Classification	☒ CAR ☐ CL ☐ FAR
Description of finding (VVB)	As per the template guide for Joint PD & MR section 7.5 'Net GHG Emission Reductions and Removals' - <i>"For all projects, state the estimated ex-ante GHG emission reductions and removals and the achieved emission reductions and removals for this monitoring period. Report the percentage difference and justify the difference. The quantities of GHG emission reductions and removals are the total quantities before any deductions for buffer credits."</i> PP is requested to update the section accordingly.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The project proponent has included all the details (percentage difference/justification of percentage difference/total quantities GHG emissions) in line with VCS template guidelines in section 7.5 of the revised Joint VCS PD MR Version 3.0.
DOE Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised VCS Joint PD and MR with section 7.5 being updated as per the template guide. This has been checked and confirmed by the verification team.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Table 2. CLs from this Joint Validation and Verification

Finding	CL 01
Classification	☐ CAR ☒ CL ☐ FAR

Finding	CL 01
Description of finding (VVB)	PP to provide clarity regarding the value used for “Annual quantity of woody biomass that would have been used in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices (B_{old})” in section 6.1. As separate values are mentioned for firewood and charcoal and how are they used for calculating ER.
Corrective Action or clarification #1 (PP shall write a detailed and clear corrective action or further information for clarification as per finding)	According to the baseline report, the value of 4.2 tons/person/year or 4.4 tons wood equivalent per household per year is mentioned for both wood stoves and charcoal stoves. Pre-project scenario (baseline scenario) – In the project activity, traditional charcoal stoves are being replaced by the distribution of improved charcoal stoves. It is important to note that the project proponent has considered the consumption of charcoal for calculating the Emission Reduction (ER) calculation. However, the value of firewood has not been included in the calculation of ER in the project activity. The mention of the firewood value serves to highlight the consumption of firewood in the host country and is included as per the information presented in the baseline report. Therefore, the value of charcoal consumption has been utilized in both the Emission Reduction (ER) Sheet and the Joint Verified Carbon Standard (VCS) Project Design and Monitoring Report (PD MR).
VVB Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.</i>	The justification provided by PP is deemed acceptable to the verification team, hence this finding is closed.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CL 02
Classification	☐ CAR ☒ CL ☐ FAR
Description of finding (VVB)	In section 6.1 of the Joint PD & MR, PP has provided, “Efficiency of baseline stove (η_{old})” as 14.5% which is obtained after considering the weighted average for three stoned fire, traditional charcoal stove and Improved stove. PP to justify why improved stove is considered for calculating the baseline stove efficiency, However, Joint PD MR does not state in the baseline scenario, also is the improved cookstove a party of any other projects. PP to clarify on double counting of emission reduction.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The Project Proponent has made revisions to section 6.1 of the revised Joint VCS Project Design and Monitoring Report (PD MR). In this section, the default value of 20% for the Efficiency of baseline stove (η_{old}) has been utilized for charcoal stoves, as per the VMR0006 Methodology, since the project targets to replace baseline charcoal stoves with improved project stoves. Double counting of emission reduction: - Procedure to avoid double counting of ICS under the Project activity. Each ICS in each project instances included in this project activity will be identified by a unique ID comprising the stove type, serial number and geographical location (e.g., VSPXXXX). Quality control and quality assurance procedures will minimize any possible double counting. Each stove’s serial number will be entered into a database that will clearly and unambiguously keep track of the unique stoves in project activity. No individual serial number can be in more than one project activity, so it will not be possible for one stove to be counted in two different project activities. A double counting check will be conducted by checking the UNFCCC database, to compare this project activity with other projects. Similarly, the database of other carbon schemes like Gold standard and VCS will also be checked to confirm that the proposed project activity is not a part of other projects.

Finding	CL 02
	During each registration process of an ICS, the customer will acknowledge that they previously used a traditional stove and previously did not own any ICS in order to be included in the project activity.
VVB Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised VCS Joint PD and MR with section 6.1 pertaining to value for “Efficiency of baseline stove (η_{old})” being updated. This has been checked and confirmed by the verification team.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CL 03
Classification	☐ CAR ☒ CL ☐ FAR
Description of finding (VVB)	Documents required: - Scanned survey forms (for baseline and monitoring survey) - Declaration from the project proponent that the project has not or shall not claim carbon credits any other scheme after Registration of the project under VCS. - Declaration from the project proponent that the project is not creating any other form of environmental credit under any specific program. - Declaration on no double counting, target group, geographical boundaries and distribution mechanism - Grievance Redress Policy and register - NPV Excel sheet - WBT sheet - Certificate of competency of the WBT test lab - Evidence for sample size calculation and precision level achieved for monitoring period (Random Number Generator) - Evidence for the start date of the grouped project activity. - Proof of right of VERs generated from the project - Evidence for cookstove distribution/ sales record for

Finding	CL 03
	current monitoring period • Evidence for unique identification number for ICS distributed. • Calibration records for equipment used during monitoring period. • Survey record for monitoring parameters • Baseline survey record • Records of all training conducted by the project proponent during monitoring period • Procedure/provision of ICS maintenance & replacement. • Calculation sheet for fNRB
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	Project Proponent has submitted the following documents along with this submission to the assessment team. • Scanned survey forms (for baseline and monitoring survey) • Declaration from the project proponent that the project has not or shall not claim carbon credits any other scheme after Registration of the project under VCS. • Declaration from the project proponent that the project is not creating any other form of environmental credit under any specific program. • Declaration on no double counting, target group, geographical boundaries and distribution mechanism • Grievance Redress Policy and register • NPV Excel sheet • WBT sheet • Certificate of competency of the WBT test lab • Evidence for sample size calculation and precision level achieved for monitoring period (Random Number Generator) • Evidence for the start date of the grouped project activity. • Proof of right of VERs generated from the project • Evidence for cookstove distribution/ sales record for current monitoring period • Evidence for unique identification number for ICS distributed. • Calibration records for equipment used during monitoring period. • Survey record for monitoring parameters

Finding	CL 03
	- Baseline survey record - Records of all training conducted by the project proponent during monitoring period - Procedure/provision of ICS maintenance & replacement. - Calculation sheet for fNRB
VVB Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.</i>	PP has provided the above documents for further evaluation. This has been checked and confirmed by the verification team. Hence this finding is closed.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CL 04
Classification	☐ CAR ☒ CL ☐ FAR
Description of finding (VVB)	PP to clarify regarding involvement of manufacturers, wholesalers, distributors, and retailers in producing, delivering, and selling cookstoves. As in section 1.16.3 'Supply Chain (Scope 3) emissions' PP has mentioned as Not applicable.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	As per Section 3.23.9 of the VCS Standard, v4.4, the "producer(s) or retailer(s) of the impacted good or service are known but not involved in the project or do not have a website". The Project Proponent has duly informed the manufacturer of the SmartHome Pro Stoves in Tanzania regarding the distribution of Improved Cookstoves (ICS) within Tanzania under this project activity. Also, intimated them about the project registration under VERRA for the generation of VCUs. Hence PP has revised the section 1.16.3 of revised Joint PD MR inline with VCS template guidelines.

Finding	CL 04
VVB Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised VCS PD-MR with section 1.16.3 being updated. PP has also provided evidence for supply chain (scope 3) which has been checked and confirmed by the verification team.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CL 05
Classification	☐ CAR ☒ CL ☐ FAR
Description of finding (VVB)	PP to provide information on types and levels of service provided by installed technologies, including a clear discussion of how the same types and levels of services would be provided in the baseline scenario. PP also needs to explain that $B_{y=1,new,l,j,survey}$ will not exceed the baseline consumption, and hence, not overestimate the ex-post emission reductions.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	Project proponent has now included the information on types and level of services by installed technologies as well as in the baseline scenario. In the project activity, the Project Proponent (PP) has chosen not to utilize the "$B_{y=1,new,l,j,survey}$" (equation 4) option for calculating Emission Reductions (ERs), as specified in the VMR0006 Methodology. The Project Proponent (PP) has chosen to utilize equation 3 with the B_{old} option for calculating Emission Reductions (ERs) in the project activity. This decision was based on the results of the Key Performance Test (KPT) conducted during the baseline survey. Under this approach, the B_{old} value, which remains constant throughout the entire crediting period, was determined ex-ante through the KPT test.

Finding	CL 05
	Therefore, "By=1,new,I,j, survey" approach is not used in the calculation of ERs.. For the project monitoring, , PP will opt for the WBT (efficiency of Improved Cookstoves) approach , to be used in the Equ (3) of the applied methodology.
VWB Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.</i>	The justification provided by PP regarding "By=1,new,I,j, survey" is deemed acceptable to the verification team and hence this finding is closed.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CL 06
Classification	☐ CAR ☒ CL ☐ FAR
Description of finding (VVB)	PP to clarify how is the Project activity instances been defined and accounted in the VCS Joint PD MR. Also PP to clearly state the vintage inline with the VMR0006 version 1.1.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	Within this grouped project activity, each Improved Cookstove (ICS) represents a distinct project activity instance, aligning with the definition provided in VCS Program Definitions version 4.2. This aspect has been updated in the Joint VCS Project Design and Monitoring Report (PD MR) and has been made consistent throughout the document. Furthermore, the Project Proponent (PP) has included the vintage information in the project activity, adhering to the guidelines outlined in VMR0006 Version 1.1.
VWB Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure,</i>	PP has provided the revised VCS Joint PD & MR defining the project activity instance for this grouped project. This has been checked and confirmed by the verification team.

Finding	CL 06
<i>additional corrective action and VVB assessments (#2, #3, etc.) shall be added.</i>	
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CL 07
Classification	☐ CAR ☒ CL ☐ FAR
Description of finding (VVB)	PP to confirm the use of tool 30 version 4 for the calculation of fNRB. (a) If it has been estimated using the most recent historical year for which data is available. (b) How H has been calculated as per section 3.1 of the TOOL30, v.04.0; (c) How RB has been calculated as per section 3.2 of the TOOL30, v.04.0; (d) How NRB has been calculated as per section 3.0 of the TOOL30, v.04.0;
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	PP has contracted an independent party for a study and calculation of fNRB as per CDM Methodological Tool: "Calculation of fraction of non- renewable biomass" (v04.0). a) As per the applied methodological tool, In the case of ex ante calculation of fNRB, the parameter fNRB has been estimated using the most recent historical year for which data is available i.e., 2017 to 2019. b) As per the section 3.1 of the TOOL 30 "The total consumption of woody biomass (H) is calculated, accounting for all consumption within the applicable area (not only wood fuel but also timber and industrial consumption)", So PP has accounted all the consumption (timber, fuelwood, charcoal) under this parameter H in line with TOOL 30. The total woody biomass consumption for

Finding	CL 07
	Tanzania is conservatively estimated to be 3,87,29,373 t/yr. c) As per the section 3.2 of the TOOL 30 “The quantity of renewable biomass available in the applicable area (RB)” which content various parameters sourced from authentic latest data available for Tanzania. The detailed calculation mentioned in the fNRB sheet shared with this submission to the VCS VVB. The quantity of renewable biomass available in Tanzania is 31,30,336 t/yr. d) The resulting non-renewable biomass (NRB)). NRB, as calculated in this report according to the latest CDM Tool 30, was found to be 3,56,19,037 t/year and the fraction of non-renewable biomass is 0.91. The calculated FNRB of 0.91 indicates that the consumption of woody biomass within Tanzania is greater than the country’s capacity to renewably or sustainably supply. This is supported by the consistent and widely reported deforestation rate observed for the country as per the references provided in the fNRB report. 1) The fNRB sheet is hereby submitting along with this submission to the VCS VVB.
VVB Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised VCS Joint PD & MR with the changes implemented. PP has provided fNRB sheet and report as evidence for the same. This has been checked and confirmed by the verification team.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CL 08
Classification	☐ CAR ☒ CL ☐ FAR
Description of finding (VVB)	During the on site it was found that PP will replace also three stone fire cook stove with the efficient cookstove, PP

Finding	CL 08
	to confirm on the calculations for the parameter B _y , savings, i,j. and charcoal
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	Due to seasonal availability and local conditions, some households depend primarily on charcoal as their cooking fuel while using smaller amounts of wood as a secondary fuel. In the project activity, traditional charcoal stoves are being replaced by the distribution of improved charcoal stoves. It is important to note that the project proponent has considered the consumption of charcoal for calculating the Emission Reduction (ER) calculation.
VVB Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.</i>	The justification provided by PP is deemed acceptable to the verification team. Hence CL08 has been closed.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CL 09
Classification	☐ CAR ☒ CL ☐ FAR
Description of finding (VVB)	In section 4.4 of the PD, PP needs to clarify how the annual stove loss rate is considered while determining the number of ICS operating during year y. PP to provide the calculation for “Discount factor to account for efficiency loss of project cookstove per year of operation (fraction)” in the joint PD MR. In the emission reduction sheet PP has added the “Annual Discount Factor for efficiency loss” 0.95, However as per the applied methodology it is “Discount factor to account for leakage”. PP to clarify on the same.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The project proponent has made revisions to the ex-ante sheet in accordance with the VMR0006 Methodology, and these revisions have been incorporated into the Joint VCS Project Design and Monitoring Report (PD&M) document.

Finding	CL 09
	PP has corrected the parameter name in line with VMR0006 Meth in the revised Ex-ante Sheet for the project activity.
VVB Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised VCS Joint PD & MR with the changes implemented. The revised Ex-ante sheet has also been provided. This has been checked and confirmed by the verification team.
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CL 10
Classification	☐ CAR ☒ CL ☐ FAR
Description of finding (VVB)	As per § 3.18.19 of the VCS standard version 4.4 states “The project proponent shall develop a grievance redress procedure to address disputes with local stakeholders that may arise during project planning and implementation, including with regard to benefit sharing. The procedure shall include processes for receiving, hearing, responding and attempting to resolve grievances within a reasonable time period, taking into account culturally appropriate conflict resolution methods. The procedure and documentation of disputes resolved through the procedure shall be made publicly available. The procedure shall have three stages.....:” PP to comply with the VCS standard and provide the relevant documents.
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	In accordance with VCS Standard Version 4.4, the project proponent has provided an explanation of the grievance redress procedure in section 2.2 of the revised Joint VCS Project Design and Monitoring Report (PD&M). The supporting evidence for this procedure has been submitted alongside the current submission to the VCS VVB.
VVB Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised VCS Joint PD and MR with section 2.2 being updated. This has been checked and confirmed by the verification team. The supporting evidence for grievance redressal procedure has also been verified.

Finding	CL 10
Conclusion <i>Tick the appropriate checkbox</i>	☐ To be checked during the next periodic verification ☐ Outstanding finding (not closed) ☒ The finding is closed

Finding	CL 11
Classification	☐ CAR ☒ CL ☐ FAR
Description of finding (VVB)	In emission reduction sheet “ Bold value” has been derived from the baseline survey done, however under section 7.5 of the Joint PD MR , PP has stated “ <i>For the activity instance 1 Bold value has been derived from the baseline study conducted in the project boundary which is 5.807 tons wood-eq/HH-yr “</i> <i>Also, in the same section $\eta_{new,i,y}$ (Value applied for the project instance 1 is 33.58%) however emission reduction sheet mentions 34.55%)</i> <i>PP is requested not to hardcode the emission reduction sheet.</i>
Corrective Action or clarification #1 <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The project proponent has made revisions to section 7.5 of the project activity, ensuring the accuracy of statements and maintaining consistency in the values presented in both the Emission Reduction (ER) sheet and the Joint VCS Project Design and Monitoring Report (PD&MR). PP has also submitted the revised ER Sheet & Sampling sheet which consist of following information with supporting evidences: - 1.Sales database 2.Sampling calculation Sheet 3.WBT Results. 4.Audit Monitoring & Baseline list.
VVB Assessment #1 <i>The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.</i>	PP has provided the revised VCS Joint PD & MR with changes implemented in section 7.5. This has been checked and confirmed by the verification team.
Conclusion	☐ To be checked during the next periodic verification

Finding	CL 11
<i>Tick the appropriate checkbox</i>	☐ Outstanding finding (not closed) ☒ The finding is closed