



# Verified Carbon Standard

## LIVELIHOODS CHITETezo MBAULA PROJECT

Document Prepared by

Carbon Check (India) Private Ltd.



<b>Project Title</b>	Livelihoods Chitetezo Mbaula Project
<b>Report Title</b>	Livelihoods Chitetezo Mbaula Project (VCS ID 3262)
<b>Version</b>	04
<b>Report ID</b>	CC IPL1334/VCS/VAL-VER/LCMP/20220509
<b>Verification Period</b>	26-March-2021 to 30-September-2022
<b>Client</b>	CO2logic Livelihoods Fund SICAV SIF
<b>Pages</b>	81
<b>Date of Issue</b>	31-May-2023
<b>Prepared By</b>	Carbon Check (India) Private Ltd.
<b>Contact</b>	Carbon Check (India) Private Ltd. 2071/38, 2 <sup>nd</sup> Floor, Naiwala, Karol Bagh, New Delhi 110005

	<p><a href="mailto:projects@carboncheck.co.in">projects@carboncheck.co.in</a></p> <p>Carbon Check (India) Private Ltd. Corporate office:</p> <p>Unit No. 1701,</p> <p>Logix City Centre Office Tower,</p> <p>Plot No. BW-58, Sector 32,</p> <p>Noida, Uttar Pradesh – 201 301</p> <p>India</p> <p><a href="http://www.carboncheck.co.in">www.carboncheck.co.in</a></p> <p><a href="mailto:projects@carboncheck.co.in">projects@carboncheck.co.in</a></p>
<b>Approved By</b>	Vikash Kumar Singh, Compliance Officer
<b>Work Carried Out By</b>	<p>Pallavi Ganesh Gedam (Team Leader, Technical Expert)</p> <p>Priscilla Kumwima (Local Expert)</p> <p>Campal Kadam (Trainee Assessor)</p> <p>Indumathi C (Technical Reviewer)</p>

## Summary:

- **A description of the project**

**Project:** The project “Livelihoods Chitetezo Mbaula Project”, employs VCS methodology; VMR0006 version 1.1 /B02/. The project involves distribution of energy efficient cookstoves to the households of Republic of Malawi. It is intended under this project high thermal efficient cookstoves will be distributed which will burn wood more efficiently thereby improving thermal transfer to pots, hence saving fuel wood. Apart from halting the progressing deforestation in Malawi, this project will also reduce health hazards from indoor smoke pollution and time spent on collecting firewood.

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

**Validation and Verification:** Livelihoods Fund SICAV SIF has appointed Carbon Check (India) Private Ltd., to carry out the validation and verification of the project “Livelihoods Chitetezo Mbaula Project”, 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-f/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 26-March-2021 to 30-September-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 Project Description (PD). The PD 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 PD 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 PD 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 validation 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 16 findings were raised, which includes:

05 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-f/, 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**

Carbon Check (India) Private Ltd. concludes the validation and verification with a positive opinion that the VCS Project “Livelihoods Chitetezo Mbaula Project” as described in the joint PD and MR (version 3.6, dated 30-May-2023) /01-f/, meets all applicable VCS requirements, including those specified in the VCS Standard (v4.4, dated 17-January-2023), relevant methodology, tools and guidelines.

The selected baseline and monitoring methodology (VMR0006 version 1.1) is applicable to the project and correctly applied. Carbon Check (India) Private Ltd. Therefore, requests the registration of the project as a VCS project.

In CCIPL's opinion, the emission reductions reported for the “Livelihoods Chitetezo Mbaula Project” in the monitoring report are fairly and correctly stated. CCIPL is therefore able to certify that the emission reductions from the “Livelihoods Chitetezo Mbaula Project” during the period from 26-March-2021 to 30-September-2022, is amount 100,959 tCO<sub>2</sub> equivalent.

# CONTENTS

---

<b>1</b>	<b>INTRODUCTION .....</b>	<b>8</b>
1.1	Objective .....	8
1.2	Scope and Criteria .....	8
1.3	Reasonableness of Assumptions and Level of Assurance .....	10
1.4	Summary Description of the Project .....	11
<b>2</b>	<b>VALIDATION AND VERIFICATION PROCESS .....</b>	<b>11</b>
2.1	Method and Criteria .....	11
2.2	Document Review.....	12
2.3	Interviews.....	13
2.4	Site Visits .....	28
2.5	Resolution of Findings.....	28
<b>3</b>	<b>VALIDATION FINDINGS .....</b>	<b>29</b>
3.1	Project Details .....	29
3.2	Participation under Other GHG Programs .....	32
3.3	Safeguards .....	32
3.4	Application of Methodology .....	33
3.5	Non-Permanence Risk Analysis.....	48
<b>4</b>	<b>VERIFICATION FINDINGS .....</b>	<b>48</b>
4.1	Accuracy of GHG Emission Reduction and Removal Calculations .....	48
4.2	Quality of Evidence to Determine GHG Emission Reductions and Removals .....	59
<b>5</b>	<b>VALIDATION AND VERIFICATION OPINION.....</b>	<b>60</b>
	<b>APPENDIX 1.1: REFERENCE DOCUMENTS.....</b>	<b>63</b>
	<b>APPENDIX 1.2: BACKGROUND DOCUMENTS .....</b>	<b>64</b>
	<b>APPENDIX 2: ABBREVIATIONS .....</b>	<b>65</b>
	<b>APPENDIX 3: CERTIFICATES OF COMPETENCE .....</b>	<b>66</b>
	<b>APPENDIX 4: FINDINGS LOG .....</b>	<b>67</b>

# 1 INTRODUCTION

## 1.1 Objective

Livelihoods Fund SICAV SIF has appointed the VVB, Carbon Check (India) Private Ltd. to perform a joint validation and verification of the VCS Project “Livelihoods Chitetezo Mbaula Project”. This report summarizes the findings of validation 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). Validation 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, VCU.

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-f/
- 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 and VCS program guide (version 4.3)/B01/ to ensure the quality and consistency of the joint validation and verification work and the report.

## 1.2 Scope and Criteria

The validation scope is defined as an independent and objective review of the Project Description (PD), 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 validation 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 Joint PD & MR /01-f/ emission reduction calculation spreadsheets /02/, supporting documents made available to the verifier /02 – 18/ 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
- VCS Standard v4.4
- Program Definitions v4.3
- Registration & Issuance Process v4.3
- VCS Validation and Verification Manual v 3.2
- VCS Methodology: VMR0006.: Methodology for Installation of High Efficiency Firewood Cookstoves” (Version 1.1)/B02/.
- 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 Joint PD & MR /01-f/, supporting documents /02//18/ 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 “Livelihoods Chitetezo Mbaula Project” is a project which employs of the VCS methodology; VMR0006 version 1.1 /B02/. The project involves distribution of energy efficient cookstoves to the population of Machinga and Zomba districts located in the Southern region of Malawi. Presently the project activity is planned to be included with distribution of 120,000 ICS in Malawi households as provided in Joint PD & MR section 1.1/01-f/. The technology distributed under this group project is fuel efficient Chitetezo Mbaula (CM) stove. PP has considered each ICS distributed as a project activity instance. The start date for the project is 26-March-2021 /04/, which is the date of installation/registration of the first stove in the project.

The project proponent for the project activity is Livelihoods Fund SICAV SIF, owns the rights to VERs /06/.

The project activity has been implemented as described in the VCS joint PD and MR /01-f/ 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 262,431 tCO<sub>2e</sub> and total 2,624,313 tCO<sub>2e</sub> for the ICS project activity over the entire fixed crediting period of 10 years.

# 2 VALIDATION AND VERIFICATION PROCESS

## 2.1 Method and Criteria

Livelihoods Funds SICAV SIF has appointed the VVB, Carbon Check (India) Private Ltd., to carry out the joint validation and verification of the project “Livelihoods Chitetezo Mbaula Project”, 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/ and assess the claims and assumptions made in the Joint PD & MR /01-f/ 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 joint PD and 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 joint PD and 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 Joint PD and MR /01/ was initially reviewed and CCIPL requested the PP to present the supporting information and documents /02/-/18/. The documents were reviewed by CCIPL. Through the process of the validation and verification, the revised 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 joint project description & MR /01-f/ and any supporting documents.

VVB has applied a 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 on site inspection.

**Table 01: On-site interview process**

SR. No.	Date	Name	Organization	Topic	Interviewer
/1/	14- November- 2022	Patrick Banda	United purpose	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management and operating system</li> <li>• Social and Environmental Impacts</li> </ul>	Campal Kadam and Priscilla Kumwima

				<ul style="list-style-type: none"> <li>Local Stakeholders meeting process</li> <li>Compliance with relevant laws</li> <li>Roles and responsibility</li> </ul>	
/2/	14-November-2022	Prince Kayisi	United purpose	<ul style="list-style-type: none"> <li>Project Design</li> <li>Project Implementation status</li> <li>Project start date and Project Location</li> <li>Baseline Scenario</li> <li>Baseline Identification and Additionality</li> <li>Qualification and Training</li> <li>Monitoring and reporting documentation</li> <li>Quality Assurance - Management and operating system</li> <li>Social and Environmental Impacts</li> <li>Local Stakeholders meeting process</li> <li>Compliance with relevant laws</li> <li>Roles and responsibility</li> </ul>	Campal Kadam and Priscilla Kumwima
/3/	14-November-2022	Yankho Lipenga	United purpose	<ul style="list-style-type: none"> <li>Project Design</li> <li>Project Implementation status</li> <li>Project start date and Project Location</li> <li>Baseline Scenario</li> <li>Baseline Identification and Additionality</li> <li>Qualification and Training</li> </ul>	Campal Kadam and Priscilla Kumwima

				<ul style="list-style-type: none"> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management and operating system</li> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> <li>• Roles and responsibility</li> </ul>	
/4/	14-November-2022	Akimu Banda	United purpose	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management and operating system</li> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> <li>• Roles and responsibility</li> </ul>	Campal Kadam and Priscilla Kumwima
/5/	14-November-2022	Thomas Batardy	CO2 Logic	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> </ul>	Campal Kadam and Priscilla Kumwima

				<ul style="list-style-type: none"> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management and operating system</li> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> <li>• Roles and responsibility</li> </ul>	
/6/	15- November- 2022	Hariet Makawa	Promoter	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management and operating system</li> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> </ul>	Campal Kadam and Priscilla Kumwima

				<ul style="list-style-type: none"> <li>• Compliance with relevant laws</li> <li>• Roles and responsibility</li> </ul>	
/7/	15-November-2022	Auswell Gunda	Promoter	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management and operating system</li> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> <li>• Roles and responsibility</li> </ul>	Campal Kadam and Priscilla Kumwima
/8/	15-November-2022	Edward Kasokota	Promoter	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management</li> </ul>	Campal Kadam and Priscilla Kumwima

				and operating system <ul style="list-style-type: none"> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> <li>• Roles and responsibility</li> </ul>	
/9/	15-November-2022	Ruth Kachulu	Promoter	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance – Management and operating system</li> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> <li>• Roles and responsibility</li> </ul>	Campal Kadam and Priscilla Kumwima
/10/	15-November-2022	Esnart Jamison	Promoter	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> </ul>	Campal Kadam and Priscilla Kumwima

				<ul style="list-style-type: none"> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management and operating system</li> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> <li>• Roles and responsibility</li> </ul>	
/11/	16- November- 2022	Gerald Makuta	Promoter	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management and operating system</li> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> <li>• Roles and responsibility</li> </ul>	Campal Kadam and Priscilla Kumwima

/12/	16- November- 2022	Martin Mitungwi	Promoter	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management and operating system</li> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> <li>• Roles and responsibility</li> </ul>	Campal Kadam and Priscilla Kumwima
/13/	16- November- 2022	Nickson Salanje	Promoter	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management and operating system</li> </ul>	Campal Kadam and Priscilla Kumwima

				<ul style="list-style-type: none"> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> <li>• Roles and responsibility</li> </ul>	
/14/	16-November-2022	Alice Chikuli	Promoter	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance – Management and operating system</li> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> <li>• Roles and responsibility</li> </ul>	Campal Kadam and Priscilla Kumwima
/15/	16-November-2022	Evancee Edurn	Promoter	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> </ul>	Campal Kadam and Priscilla Kumwima

				<ul style="list-style-type: none"> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management and operating system</li> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> </ul> <p>Roles and responsibility</p>	
/16/	16-November-2022	Dines Makaika	Promoter	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management and operating system</li> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> </ul> <p>Roles and responsibility</p>	Campal Kadam and Priscilla Kumwima

/17/	17- November- 2022	Gladys Viano	Promoter	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management and operating system</li> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> </ul> Roles and responsibility	Campal Kadam and Priscilla Kumwima
/18/	17- November- 2022	Luwis Kamasa	Promoter	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management and operating system</li> </ul>	Campal Kadam and Priscilla Kumwima

				<ul style="list-style-type: none"> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> </ul> Roles and responsibility	
/19/	17-November-2022	Mary John	Promoter	<ul style="list-style-type: none"> <li>• Project Design</li> <li>• Project Implementation status</li> <li>• Project start date and Project Location</li> <li>• Baseline Scenario</li> <li>• Baseline Identification and Additionality</li> <li>• Qualification and Training</li> <li>• Monitoring and reporting documentation</li> <li>• Quality Assurance - Management and operating system</li> <li>• Social and Environmental Impacts</li> <li>• Local Stakeholders meeting process</li> <li>• Compliance with relevant laws</li> </ul> Roles and responsibility	Campal Kadam and Priscilla Kumwima
/20/	17-November-2022	Alice Mbayani	Local stakeholder - Agriculture	<ul style="list-style-type: none"> <li>• Local Stakeholder Consultation</li> <li>• Social and Environmental Impacts</li> </ul>	Campal Kadam and Priscilla Kumwima
/21/	15-November-2022	Maliyamu Wilad (Stove ID-KAL/2105/1867)	End User (Monitoring survey)	Monitoring survey of the project activity and grievance mechanism.	Campal Kadam and Priscilla Kumwima

/22/	15-November-2022	Matola Miliwad (Stov- ID - NGW/2008/13107)	End User (Monitoring survey)	Monitoring survey of the project activity and grievance mechanism.	Campal Kadam and Priscilla Kumwima
/23/	15-November-2022	Georgina Masala (Stove ID- NGW/2009/800)	End User (Monitoring survey)	Monitoring survey of the project activity and grievance mechanism.	Campal Kadam and Priscilla Kumwima
/24/	15-November-2022	Witness Chbudu (Stove ID- NGW2009/1253)	End User (Monitoring survey)	Monitoring survey of the project activity and grievance mechanism.	Campal Kadam and Priscilla Kumwima
/25/	15-November-2022	Luckia Misesa (Stove ID- TIY/10/202/23261)	End User (Monitoring survey)	Monitoring survey of the project activity and grievance mechanism.	Campal Kadam and Priscilla Kumwima
/26/	15-November-2022	Mercy Chisawawa	End User (Baseline survey)	Baseline survey of the project activity. (Baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking)	Campal Kadam and Priscilla Kumwima
/27/	15-November-2022	Trevia Lipenga	End User (Baseline survey)	Baseline survey of the project activity. (Baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking)	Campal Kadam and Priscilla Kumwima
/28/	15-November-2022	Hilda Masaka	End User (Baseline survey)	Baseline survey of the project activity. (Baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking)	Campal Kadam and Priscilla Kumwima
/29/	15-November-2022	Lucy Grant (Stov- ID - SIK209/53250)	End User (Monitoring survey)	Monitoring survey of the project activity and grievance mechanism.	Campal Kadam and Priscilla Kumwima

/30/	15-November-2022	Elinala Lakatika (Stov- ID - ADA2009/24 36)	End User (Monitoring survey)	Monitoring survey of the project activity and grievance mechanism.	Campal Kadam and Priscilla Kumwima
/31/	15-November-2022	Elida Kadangwe (Stov- ID - MKU/2010/7 520)	End User (Monitoring survey)	Monitoring survey of the project activity and grievance mechanism.	Campal Kadam and Priscilla Kumwima
/32/	16-November-2022	Iness Shaibu	End User (Baseline survey)	Baseline survey of the project activity. (Baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking)	Campal Kadam and Priscilla Kumwima
/33/	16-November-2022	Estere Nihayi	End User (Baseline survey)	Baseline survey of the project activity . (Baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking)	Campal Kadam and Priscilla Kumwima
/34/	16-November-2022	Melise Matiki	End User (Baseline survey)	Baseline survey of the project activity. (Baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking)	Campal Kadam and Priscilla Kumwima
/35/	16-November-2022	Joyce Kabaita	End User (Baseline survey)	Baseline survey of the project activity. (Baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking)	Campal Kadam and Priscilla Kumwima
/36/	16-November-2022	Patuma Alabi	End User (Baseline survey)	Baseline survey of the project activity. (Baseline cooking technology, cooking habits, fuel consumption and	Campal Kadam and Priscilla Kumwima

				drawbacks of the baseline technology use for cooking)	
/37/	16-November-2022	Njaya Chipojola (Stov- ID - KAL/1020/27485)	End User (Monitoring survey)	Monitoring survey of the project activity and grievance mechanism.	Campal Kadam and Priscilla Kumwima
/38/	16-November-2022	Patuma Kanyengo (Stove ID - MKU/03/20/8223)	End User (Monitoring survey)	Monitoring survey of the project activity and grievance mechanism.	Campal Kadam and Priscilla Kumwima
/39/	16-November-2022	Adonia Allan (Stov- ID - SLK/20/08/18710)	End User (Monitoring survey)	Monitoring survey of the project activity and grievance mechanism.	Campal Kadam and Priscilla Kumwima
/40/	16-November-2022	Hilda Sangwa	End User (Baseline survey)	Baseline survey of the project activity. (Baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking)	Campal Kadam and Priscilla Kumwima
/41/	17-November-2022	Cecelia Levison	End User (Baseline survey)	Baseline survey of the project activity. (Baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking)	Campal Kadam and Priscilla Kumwima
/42/	17-November-2022	Agness Kananji	End User (Baseline survey)	Baseline survey of the project activity. (Baseline cooking technology, cooking habits, fuel consumption and drawbacks of the baseline technology use for cooking)	Campal Kadam and Priscilla Kumwima
/43/	17-November-2022	Elubyka Thumba (additional sample)	End User (Baseline survey)	Baseline survey of the project activity. (baseline cooking technology, cooking habits, fuel consumption and drawbacks of the	Campal Kadam and Priscilla Kumwima

				baseline technology use for cooking)	
/44/	17- November- 2022	Yamikani Bizwick (Stove ID - KAL/2021/1 026) (additional sample)	End User (Monitoring survey)	Monitoring survey of the project activity and grievance mechanism.	Campal Kadam and Priscilla Kumwima

## 2.4 Site Visits

Carbon Check has conducted an on-site inspection 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 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 05 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 “Livelihoods Chitetezo Mbaula Project” employs baseline and monitoring methodology; VRM0006 version 1.1 /B02/. The project involves distribution of fuel-efficient improved cook stoves - Chitetezo Mbaula (CM) in Machinga and Zomba districts in Southern region of Malawi for this monitoring period. This project promotes the distribution of Chitetezo Mbaula stove to 120,000 households in Malawi. The implementation schedule is given in the 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 Chitetezo Mbaula stove will burn the wood efficiently, which improves the thermal energy direct to the pot, so conserving nonrenewable biomass. Section 1.1. of the VCS Joint PD& MR contains a clear summary description of the projects. The completeness and accuracy of the project description was validated through onsite interviews.

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

The project proponent is Livelihoods Funds SICAV SIF which will be holding the carbon credits generated form the project activity. Other entities involved in the project are United Purpose and CO2 logic as per section 1.7 of VCS joint PD & MR /01-f/.

**Project start date**

The start date for the project is 26-March-2021 /04/ which is the date of installation of first stove under this project activity.

**Project crediting period**

The crediting period starts on 26-March-2021 /04/, which is the same day on which the first stove was installed, and lasts for 10 years, fixed. 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 estimated average annual GHG emission reductions or removals is 262,431 which is less than 300,000 tonnes of CO<sub>2</sub>e per year. The validation team confirms that the project activity falls under 'Project' in accordance with paragraph 3.9.1 of the VCS standard v.4.3/B01-a/.

**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 are those of Machinga and Zomba districts in the southern region 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.

**Conditions prior to project initiation**

Traditional cookstoves (TSFs) were used in the households. The project will replace baseline stoves which are three stone fire stoves using large quantities of non-renewable biomass with high efficiency stoves using woody 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. The project type/category is not included in the "List of projects or activities requiring prior environmental clearance" included in the Environmental Impact Assessment (EIA) notification of the Ministry of Environment and Forest (MOEF). Hence the project complies with relevant local, regional and national laws, statutes and regulatory frameworks. The proposed 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 Malawi 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/19/. The validation team has checked the UNFCCC database of registered projects or projects under validation and also based on document review /19/,/20/ 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.

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 but is not developed as a grouped project, this is indicated in section 1.2. of the VCS Joint PD & MR /01-f/.

### **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/01-f/.

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

- SDG 1: Reducing household expenses incurred on purchasing fuel wood by enabling efficient cooking, thereby reducing fuel wood consumption. Providing job opportunities for stove manufacturers and also access to functioning boreholes.
- SDG 2: Pigeon peas are distributed for every purchased cookstoves.
- SDG 3: Improved health: cooking with ICS reduces exposure to harmful smokes emitted during cooking is reduced. By rehabilitation of bore holes, people will have access for clean and safe drinking water.
- SDG 5: 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.
- SDG 7: Providing households with efficient and affordable cooking technology – ICS
- SDG 13: Reduced GHG emission with use of efficient cooking technology.SDG 15: Reducing deforestation due to efficient fuel usage that occurs when using the ICS.
- SDG 15: Reducing deforestation due to efficient fuel usage that occurs with using ICS.

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 Joint PD & MR /01-f/ 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 Joint PD & MR /01-f/, 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 23-September-2021 at Zomba and Machinga and have been provided in the section of 2.2 of the joint PD & MR /01-f/which was verified by the VVB.

The key comments made by the local stakeholders were all answered during the local stakeholder consultation meetings and have also been provided in the section of 2.2 the joint PD & MR /01-f/.

The Project Proponent has reported its feedback and grievance redressal procedure in Section 2.2 of the joint PD & MR /01-f/, and the policy is outlined in the document “Project Grievance Redress Mechanism” /17/. PP has provided hotline numbers to its stakeholders for continued communication regarding the project and also annual meetings are held with the district committee to keep them updated/01-f/. 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/, /17/, it can be confirmed that grievance addressal procedure has been designed and is implemented according to section 2.2 of the Joint PD & MR /01-f/ and that it is effective in its aim.

VVB confirms on 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 04-August-2022 to 03-September-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)”

The associated tools and guideline documents in the Project include:

- CDM Guideline “Sampling and surveys of CDM project activities and programmes of activities” version 04.0
- CDM Standard “Sampling and surveys for CDM project activities and programmes of activities” version 09.0

### 3.4.2 Applicability

**Table 02: The applicability criteria of the applied methodology VMR0006 version 1.1 is justified as below:**

Applicability criterion	How the project complies	Means of validation
Project activities shall be implemented in domestic premises or in	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 Chitetezo Mbaula will only be distributed in

community-based kitchen		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;	Energy Efficient stoves planned to be installed under this project are single pot wood-based cook stoves that have an efficiency of 31% as per the catalog of clean cookstoves ( <a href="http://catalog.cleancookstoves.org/stoves/385">http://catalog.cleancookstoves.org/stoves/385</a> )	VVB has reviewed the manufacturer specification /05/ which confirms that the ICS distributed to the end users has 31% 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 project activity is lesser than 300,000 tonnes CO <sub>2</sub> e per year. Therefore, proposed project qualifies the “Project” criteria.	VVB through document review and onsite visit interviews can confirm that the Chitetezo Mbaula stove 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 less than 300,000 tCO <sub>2</sub> (i.e., 262,431 tCO <sub>2</sub> ) and hence the project is small project as per VCS.
Non-renewable biomass has been used in the project region since 31 December 1989, using survey methods or referring to published literature, official reports, or statistics;	Proof that biomass has been used in the project region, i.e., in the host country Malawi since 31 December 1989 is available through widespread documentation.	The validation team reviewed the FOA Global Forest Resources Assessment 2020 Country Reports, which demonstrates the use of Non-renewable biomass since 1989 in Malawi. 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	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	Not applicable

<p>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)</p>	<p>reduce the use of non-renewable biomass for combustion.</p>	
<p>The VCS JOINT PD &amp; 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)</p>	<p>Each ICS in this project will be identified by a unique stove identification code which is stamped on stove during production. The code consists of three letters indicating the stove production group, followed by year and month in which it was produced and a serial number. The code will be a unique number which will allow for a clear distinction between the stoves. No individual code can be repeated within the project, thus ensuring that each stove is counted only once in the proposed project.</p>	<p>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.</p>
<p>The VCS JOINT PD &amp; 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</p>	<p>Manufacturers/ cook stove distributors undertaking to be provided that there is no double accounting for carbon emissions associated with ICS supplied to households under the project activity having Project Owner (Livelihoods Fund SICAV SIF.). Livelihoods Fund SICAV SIF will be owner of that carbon credits and Manufacturers/ cook stove distributors will not claim any credits for such cook stoves.</p>	<p>VVB by means of onsite visit audit interviews and the review of sample beneficiary (end-user) undertaking /06/,/ 13/confirms that the proposed procedures prevent double counting of emission reductions as the project is uniquely identified.</p>

followed. (Additionally, applicability criteria numbers 8 and 9 set out in Section 2.2 of AMS II.G, version 11.1 shall apply)		
---	--	--

### 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-f/ are deemed to be appropriate and assessed below:

**Table 03: Project Boundary**

Source		Gas	Included?	Justification/Explanation
Baseline	Emission from use of nonrenewable biomass/Fossil fuel	CO <sub>2</sub>	Yes	Major Source
		CH <sub>4</sub>	Yes	Major source
		N <sub>2</sub> O	Yes	Major source
		Other	No	No other source identified
Project	Emission from use of nonrenewable biomass	CO <sub>2</sub>	Yes	Major source
		CH <sub>4</sub>	Yes	Major source
		N <sub>2</sub> O	Yes	Major source
		Other	No	No other source identified

The project boundary consists of the physical, geographical locations of the distributed ICS limited to Machinga and Zomba districts. This includes: “The Nonrenewable biomass used by the project cooking system”.

### 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 apply 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 PD complies with the requirements of the methodology, as the energy baseline is the existing level of consumption of non-renewable biomass used by the cooking systems currently in use and which is used in the absence of the project activity.

VVB based on review of the VCS Joint PD & MR /01-f/ 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/ 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/. The methodology uses activity method for the demonstration of additionality. As per the methodology, the project activity falls under the positive list of technologies and project activity types that are defined as automatically additional. The cookstove distribution are divided into SCTP approach and commercial approach. 30,000 cookstoves are distributed free of cost to the SCTP beneficiaries proving the additionality for positive list. Project method and investment analysis is done for commercial approach where 70,000 cookstoves are sold at subsidized rate. 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 - Economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs)” to propose that the project is not financially feasible without the revenue generated from the sales of certified emission reductions (CER’s). As commercial approach is also present, 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 ( $NPV \lll 0$ ), and is calculated with the following parameters:

- A discount rate of 12% representing the usual cost of capital finance for this type of project is used.
- An average EUR/MK exchange rate of 930 (year 2021)

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

- Income sources
  - Included
    - Stoves sales
  - Excluded
    - Carbon revenues
- Expenses sources :
  - Included
    - stove production/distribution/replacement
    - boreholes rehabilitation
    - pigeon peas purchase
    - selected part of direct operational costs (transport and warehousing, stove promoters etc)
  - Excluded (for simplicity purpose, leading to a conservative NPV analysis)
    - Selected part of operational costs (salaries, equipment, etc.)
    - Support costs: logistics, administration etc
    - Certification process costs
    - Consulting costs

The NPV thus calculated is equal to -388,345 EUR, which clearly demonstrate economic unfeasibility without inflows of revenue from carbon credits.

**Table 04: NPV value calculated for different discount rates and exchange rates**

Discount rate	Exchange rate	NPV
12%	930	-388,345
14%	930	-360,137
16%	930	-334,969
18%	930	-312,429
20%	930	-292,172
20%	1100	-270,179
20%	1200	-260,153
20%	1300	-251,670
20%	1400	-244,398

The NPV clearly remains negative even in case of extreme variations in discount rates and hence supports the above conclusion of the project not being feasible in absence of revenue generated from CERs. Furthermore, the project activity meets all the applicability conditions of the applied methodology VMR0006, version 1.1 and distributes stoves at zero cost to SCTP end-users and has no other source of revenue other than the sale of GHG credits in case of the commercial approach. Hence the project qualifies under positive list and deemed additional.

Therefore, VVB confirms that distribution of energy efficient cookstoves in Malawi 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 Joint PD & MR /01-f/. 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 Joint PD & MR /01-f/, confirms that the formulae are correctly presented for the determination of emissions reductions at project instance level. The parameters and equations presented in the Joint PD & MR /01-f/, 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 Joint PD & MR/01-f/ 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 three-stone fire. |
| $J$          | = | 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 <sub>2</sub> e  |
| $ER_{y,i,j}$ | = | Emission reductions by improved cookstove of type $i$ and batch $j$ during year $y$ in t CO <sub>2</sub> 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 ( $f_{NRB}$ ) <sup>1</sup>
$NCV_{wood\ fuel}$	=	Net calorific value of the non-renewable woody biomass that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/tonne) <sup>2</sup>
$EF_{wf,CO_2}$	=	CO <sub>2</sub> emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 tCO <sub>2</sub> /TJ) <sup>3</sup>
$EF_{wf,non\ CO_2}$	=	Non-CO <sub>2</sub> emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 26.23 tCO <sub>2</sub> /TJ) <sup>4</sup>
$N_{y,i,j}$	=	Number of improved cookstoves of type $i$ and batch $j$ operating during year $y$
0.95	=	Discount factor to account for leakage

The quantity 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

<sup>1</sup> Default values endorsed by designated national authorities and approved by the Board are available at <https://cdm.unfccc.int/DNA/fNRB/index.html>

<sup>2</sup> 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 1 Introduction

<sup>3</sup> 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion

<sup>4</sup> 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion

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.

$\eta_{old}$	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 firewood in baseline cookstove(s) by project households in addition to improved cookstove (in tonnes per device)
$\mu_y$	Baseline stove usage factor to account for use of baseline cookstoves. along with improved cookstoves

According to the kitchen performance test performed by PP,  $B_{old}$  is calculated to be 2.47. This value is obtained by doing the weighted average of the woodfuel consumption of households using only the 3 stone fire (83% of households, 2.27 t<sub>woodfuel</sub>/hh.year) and the households using both three stone fire and charcoal stoves (17% of households, 3.81 t<sub>woodfuel</sub>/hh.year) :

$$83\% * 2.27 + 17\% * 3.81 = 2.47 \text{ t}_{woodfuel}/hh.year$$

Details on % of households using only 3SF or 3SF + charcoal stoves, and details on the calculations of woodfuel consumptions for both scenario's.

PP has opted different energy efficiencies and emission reductions depending on the age of the stoves, this project uses the concept of "age groups" (AG) to differentiate between stoves that are distributed during different monitoring periods. All the stoves age group, description and drop-off rate are provided in section 5.4 of the Joint PD and MR /01-f/ and are well explained. This is deemed appropriate to the VVB.

This project would achieve an estimated total emission reduction of 2,624,313 tCO<sub>2e</sub> in the 10-year crediting period and an average of 262,431 tCO<sub>2e</sub> per year, during this monitoring period 26-March-2021 to 30-September-2022 the total emission reduction achieved is 100,959 tCO<sub>2</sub> as indicated in the VCS Joint PD & MR /01-f/ 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 “Livelihood Chitetezo Mbaula Project” 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/. According to section 6.1 and 6.2 of Joint PD & MR /01-f/ 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 05: Parameters Determined ex-ante**

Parameter	Unit	Value	Assessment
$f_{NRB,y}$	Fraction	0.98	-Fixed ex-ante The value is calculated by third party C4 Ecosolutions in line with the applicable methodological CDM Tool 30, version 3.0.
$NCV_{wood\ fuel}$	TJ/tonne	0.0156	- Fixed ex-ante - Default values from the 2006 IPCC Guidelines have been used.
$EF_{wf,CO2}$	tCO <sub>2</sub> /TJ	112	- Fixed ex-ante - Default values from the 2006 IPCC Guidelines have been used.
$EF_{wf,non\ CO2}$	tCO <sub>2</sub> /TJ	26.23	- Fixed ex-ante - Default values from the 2006 IPCC Guidelines have been used.
$\eta_{old}$	Fraction	0.1	- Fixed ex-ante - Default values from the methodology.
$\eta_p$	Fraction	0.31	- Fixed ex-ante -Manufacturers specification.

$\eta_{new,i}$	Fraction	$\eta_{new,AG0-1}$	29.14 %	- Fixed ex-ante  -Value calculated as per VMR0006 v1.1, section 8.4
		$\eta_{new,AG1-2}$	28.85 %	
		$\eta_{new,AG2-3}$	28.56 %	
		$\eta_{new,AG3-4}$	28.27 %	
L (leakage)	Fraction	0.95		- Fixed ex-ante  - Default values from the methodology.
Life span	No. of years	4		- Fixed ex-ante  - Lifespan Survey for Chitetezo Mbaula Stoves, Lilongwe, Malawi, December 2020, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Energising Development
$B_{old}$	Tonnes/yr	2.47		- Fixed ex-ante  -Value calculated as per VMR0006 v1.1, section 8.4

#### Assessment of $f_{NRB,y}$

PP has contracted an independent party “C4Ecosolutions” for a study and calculation of  $f_{NRB}$  as per CDM Methodological Tool: “Calculation of fraction of non- renewable biomass” (v03.0). Validation team confirms that it has checked  $f_{NRB}$  calculation report/spread sheet /11/ prepared by C4Ecosolutions.

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 C4Ecolution 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 C4Ecosolutions 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 Malawi is as per the  $f_{NRB}$  report /11/ prepared by C4Ecolution is estimated to be 22,360,940 t/yr, which is deemed appropriate to the VVB.

In Malawi four ecological zone has been found i.e. tropical dry forest, tropical moist forest, tropical mountain system, and water and the same was verified by referring the FAO data through web-research.

VVB has noted that in the report /11/ geospatial data products for Malawi were analysed in R21-25 to estimate Malawi renewable biomass. The woody cover from all areas defined as “forest” (>10%) cover “other wooded land” (5-10% cover) as well as “other land” (<5% cover), according to the FAO definitions for 2000 and 2020 was estimated using Hansen/UMD/Google/USGS/NASA spatial data, which is derived from Hansen et al.

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 Malawi are 1.65, 0.92, 1.90, and 0.91 t/ha/year for the tropical dry forest, tropical moist forest, tropical mountain system, and area categorised as “water” respectively.

As per paragraph 13 of the Tool 30 version 03.0,

*“If the fNRB 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 fNRB report prepared by C4 Eco Solutions (Pty) Ltd /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 fNRB report /11/ is as below:

*“The resulting non-renewable biomass (NRB) value was compared with the top-down product of average above-ground biomass (78.7t/ha)<sup>1</sup> and the average annual deforestation rate between 2010–2020 (42,000 ha/year). NRB, as calculated in this report according to the latest CDM Tool 30, is 21,843,646 t/year, which is significantly greater than the cross-check results based on deforestation (3,305,400 t/year). It is expected that the cross-check estimate of biomass loss from deforestation would grossly under-estimate the actual extent of non-renewable biomass consumption as it only considers the average biomass stocks from areas that are completely deforested. Unsustainable wood harvesting that leads to forest degradation and significant reductions in biomass stocks, but not complete deforestation, are not considered in the cross-check.”*

However, VVB had also cross check the values referring to the other registered projects under VCS in Malawi, this approach deemed to be appropriate.

below provides the validated total, protected and remote forest cover extent, mean annual increment and renewable biomass by ecological zone for the Republic of Malawi.

**Table 06: Ecological zones with renewable biomass**

Ecological Zone	Total forest cover (ha)	Protected cover (ha)	Remote cover (ha)	MAI (t/ha/yr)	Renewable biomass (t/yr)
Tropical dry forest,	254,251	254,251	254,251	254,251	254,251
Tropical moist forest	1,085,972	1,085,972	1,085,972	1,085,972	1,085,972
Tropical mountain system	267,937	267,937	267,937	267,937	267,937
“Water”	29,884	29,884	29,884	29,884	29,884
<b>TOTAL</b>	<b>1,638,044</b>	<b>1,638,044</b>	<b>1,638,044</b>	<b>1,638,044</b>	<b>1,638,044</b>

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

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<sub>forest,i</sub> = Mean Annual Increment of woody biomass growth per hectare in subcategory i of forest areas in the relevant period (tonnes/ha/yr)

MAI<sub>other,i</sub> = Mean Annual Increment of woody biomass growth per hectare in subcategory i of other land areas in the relevant period (tonnes/ha/yr)

F<sub>forest,i</sub> = Extent of forest in sub-category i in the relevant period (ha)

F<sub>other,i</sub> = Extent of other land in sub-category i in the relevant period (ha)

P<sub>forest,i</sub> = 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<sub>other,i</sub> = 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

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

According to the “Forestry Department of the Food and Agriculture Organization (FAO)”, average annual deforestation rates in Malawi from 1974 to 1993 averaged 2.8%. Also, section 5.1 of the FOA report indicates that the majority of wood energy users are found in the rural areas where almost 90 % of the population lives and biomass is the only energy source available. Further report published in April 20199 reveals that over 98% of rural and 90% of urban users rely on wood and charcoal as a primary fuel, a situation that has changed little in the past two decades and is likely to continue for the foreseeable future as the population increases. The study further states that demand is increasing for all fuel types, with a growth rate slightly higher than that of the population. This is due primarily to charcoal consumption, which is increasing very fast in urban areas (+10% per year) but also in rural areas (+4% per year). The supply potential is decreasing moderately at a rate of 0.8% per year, an effect of

deforestation and accumulating degradation. Over the period 2016-2021, the national supply/demand balance changes considerably from an initial surplus to a deficit situation. This critical turning point is projected to be in 2019. This means that the rate of impact on remaining resources is gaining momentum with a likely worsening of degradation processes. It can therefore be concluded that nonrenewable biomass has been used in Malawi since long back before 31st December 1989.

The difference between woody biomass consumption and renewable biomass is considered to be non-renewable. Non-renewable biomass utilization in Malawi is, therefore, validated as 21,843,646 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 Malawi is, therefore, validated as 0.98.

From the review of this report/spread sheet /11/ and interviews with the PPand C4 EcoSolutions (Pty) Ltd, validation teams confirms the following:

- The report has been prepared by an independent party (i.e., C4 EcoSolutions (Pty) Ltd.), who is experienced in conducting such study.
- 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” (v03.0) 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 fNRB is correct and in line with the CDM Methodological tool: Calculation of the fraction of non-renewable biomass (v03.0) and thus acceptable to the validation team.

**Table 07: 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	$\mu_y$	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-f/ 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 protected by PP for a period of more than two years. In addition, 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 Joint PD & MR /01-f/. 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/. 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 PD and the applied monitoring methodology.

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

#### **Baseline Emission**

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

Where:

- $i$  = Indices for the situation where more than one type/model of improved cookstove is introduced to replace three-stone fire
- $j$  = 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<sub>2</sub>e
- $ER_{y,i,j}$  = Emission reductions by improved cookstove of type  $i$  and batch  $j$  during year  $y$  in t CO<sub>2</sub>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 (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)
- $EF_{wf,CO_2}$  = CO<sub>2</sub> emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 tCO<sub>2</sub>/TJ)
- $EF_{wf,non\ CO_2}$  = Non-CO<sub>2</sub> emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 26.23 tCO<sub>2</sub>/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.
$\eta_{old}$	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 firewood in baseline cookstove(s) by project households in addition to improved cookstove (in tonnes per device)
$\mu_y$	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 “Livelihood Chitetezo Mbaula Project” have being claimed for this monitoring period and the total population of the stoves (equivalents corrected) for this monitoring period (26-March-2021 to 30- September-2022) is 35,290 ICS.

The sampling plan implemented by the PP is in accordance with the applied approved monitoring methodology /B02/ and the VCS Joint PD & MR /01-f/. The PP has appropriately performed Simple random sampling procedure and has chosen a sample size of 150 (as the target population is greater than 1000 households, minimum sample size will be 100) which in line with the applied methodology VMR 0006 version 1.1/B02/. As the VCS Joint PD & MR /01-f/ mentions the option for Simple random sampling procedure, it is acceptable to the validation and verification team.

The sampling surveys have been carried out by the well-trained personnel /13/. Monitoring parameters  $N_{y,j,j}$  and  $\mu_y$  are monitored through monitoring sample surveys. Monitoring of the parameters ensures compliance with the applied methodology VMR0006, version 1.1 /B02/. Verification team has checked

the survey records /08/. Parameter  $N_{y,j,j}$  monitors the number of stove in operation and the parameters  $\mu_y$  Adjustment to account for any continued use of pre-project devices during the year  $y$ .

PP has surveyed 141 sampled households for the current monitoring period. A usage rate of 0% has been applied for the stoves that are not in use or broken.

VVB used 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 22 samples, all the 22 stoves were found to be operational, and this matched with the PP's records and hence no discrepant records were observed with the Joint PD & MR /01-f/ 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/. 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  $y$  ( $\mu_y$ )

Simple random sampling was applied by the PP for selection of the monitoring samples considering a minimum sample size of 10% of the target population i.e., 1000 households for determining the sampling for all the parameters which is deemed acceptable as per the VCS Joint PD & MR /01/.

On site assessment of Monitoring parameters (namely  $\mu_y$  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  $\mu_y$ ) and survey on stove operation (for the parameter  $N_{y,i,j}$ ).
- Assessment of Competence of personnel involved in conducting standardized tests viz.,  $\mu_y$  and surveys: Verification team has reviewed the abilities, qualifications and recognition of involved personnel and institutions of the measuring team involved in the  $\mu_y$ . The verification team based on the onsite inspection interviews confirms that the team was qualified to carry out the  $\mu_y$  in line with the methodology.

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/ and the PP monitoring procedure in line with the VCS Joint PD & MR /01-f/.

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 1.1 section 9.2 /B02/. The necessary confidence / precision of 90/10 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/. 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 08: 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:		2021	2022
	AG-01	14,178	12,983
	AG- 1-2	0	8,129

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-f/
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?	<p>Yes, the reported data in Joint PD &amp; MR /01-f/ 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.</p> <p>VVB confirms here that onsite assessment of Monitoring parameter <math>N_{y,i,j}</math> was conducted based on following two methods:</p> <ul style="list-style-type: none"> <li>➤ Confirmation with the household/end user whether or not the PP has performed monitoring/measurement campaign, survey</li> </ul>

	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?	NA
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 $y$ ( $\mu_y$ )
Measuring frequency/Time Interval:	At least once every two years
Reporting frequency:	Annually
Reported value:	12%
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/
Is accuracy of the monitoring equipment as stated in the VCS JOINT PD & MR? If the VCS JOINT PD & MR VVBs not specify the	NA

accuracy of the monitoring equipment, VVBs the monitoring 55racticet represent good monitoring practise?	
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 /O1-f/
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 /O2/.
How were the values in the monitoring report verified?	NA
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):	Adjusted baseline fuel use to account for any continued use of pre-project devices during the year y ( <b>B</b> old,adjusted)
Measuring frequency/Time Interval:	Once per monitoring period
Reporting frequency:	Once per monitoring period
Reported value:	2.17
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/ .
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 practice?	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 practice?	NA.. QA/QC procedures stated in MR comply with registered VCS Joint PD & MR /01-f/
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?	<p>Yes, the reported data in MR/01/ has been compared with the ER sheet /02/.</p> <p>VVB during the onsite assessment of Monitoring parameters <math>B_{old,adjusted}</math> was conducted based on following two methods:</p> <ul style="list-style-type: none"> <li>➤ Confirmation with the household/end user whether or not the PP has performed monitoring/measurement campaign (or parameter <math>B_{old,adjusted}</math>) and survey on stove operation ( for the parameter <math>N_{y,i,j}</math> ).</li> <li>➤ Assessment of Competence of personnel involved in conducting standardized tests viz., <math>B_{old,adjusted}</math> and surveys: Verification team has reviewed the abilities, qualifications and recognition of involved personnel and institutions of the measuring team involved in the <math>B_{y=1,new,i,j,survey}</math>. The verification team based on onsite interviews confirms that the team was qualified to carry out the <math>B_{old,adjusted}</math> and Usage survey in line with the methodology. PP has also detailed the calculation method under section 4.2 of the MR.</li> </ul>
How were the values in the monitoring report verified?	NA
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

Monitoring Parameter Requirement	Assessment/ Observation by the VVB
Data / Parameter: (as in monitoring plan of VCS JOINT PD & MR):	The operating lifetime of the project device. (Life Span)
Measuring frequency/Time Interval:	Once at the time of project stove installation
Reporting frequency:	Once at the time of project stove installation
Reported value:	4
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes
Details of monitoring equipment:	Value obtained from technical specification /05/
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-f/
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?	NA
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

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-f/. The total number of emission reductions for the monitoring period (26-March- 2021 to 30- September- 2022) is 100,959 tCO<sub>2e</sub>.

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.

When assessing the audit trails, CCIPL also examined:

1. whether sufficient evidence was available, both in terms of frequency and in covering the full monitoring period
2. the source and nature of the evidence
3. 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 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, Livelihoods Fund SICAV SIF, has commissioned the VVB, Carbon Check (India) Private Ltd. to perform a Joint validation and verification of the VCS Project Activity “Livelihoods Chitetezo Mbaula Project”. 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 was 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 Joint PD & MR /O1-f/ 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 262,431 tCO<sub>2</sub>e and 2,624,313 tCO<sub>2</sub>e over the 10 years of crediting period.

Carbon Check (India) Private Ltd concludes the validation with a positive opinion that the VCS Project Activity “Livelihoods Chitetezo Mbaula Project”, as described in the VCS Joint PD & MR (version 3.3, dated 14-February-2023) /O1-f/, 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 Joint project description & Monitoring report /O1-f/.

Monitoring period: From 26-March-2021 to 30-September-2022

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

Table 09: Estimated GHG emission reductions or removals (tCO<sub>2</sub>e)

Year	Estimated GHG emission reductions or removals (tCO <sub>2</sub> e)
Year 1	30,014
Year 2	102,269
Year 3	190,441
Year 4	306,459
Year 5	362,037
Year 6	361,441
Year 7	386,383
Year 8	362,037
Year 9	308,917
Year 10	214,317
<b>Total estimated ERs</b>	<b>2,624,313</b>
<b>Total number of crediting years</b>	<b>10</b>
<b>Average annual ERs</b>	<b>262,431</b>

 Table 10: Net GHG emission reductions or removals (tCO<sub>2</sub>e)

Year	Baseline emissions or removals (tCO <sub>2</sub> e)	Project emissions or removals (tCO <sub>2</sub> e)	Leakage emissions (tCO <sub>2</sub> e)	Net GHG emission reductions or removals (tCO <sub>2</sub> e)
2021 (26-March-2021 to 31-December-2021)	0	40,610	0	40,160
2022 (01-January-2022 to 30-September-2022)	0	60,349	0	60,349
<b>Total</b>	<b>0</b>	<b>100,959</b>	<b>0</b>	<b>100,959</b>

The verification team is of the opinion that the project has been implemented in accordance with the registered project description, the MP with complies with the approved monitoring methodology, the monitoring complies with the MP and the monitored data and calculation of ERs are assessed and confirmed as correct.

Therefore, CCIPL hereby certifies, and requests the issuance of, the reported ERs during the monitoring period of 26-March-2021 to 30-September-2022 amounting to 100,959 tCO<sub>2e</sub> to the VCS Registry.

Ex ante estimations are made to the prorate of the number of days on each year

- 2021 : (280 days/365 days) \* 30,014 = 23,024 tCO<sub>2e</sub>
- 2022 : (272 days/365 days) \* 102,269 = 76,211 tCO<sub>2e</sub>

**Table 11: Percentage difference for ex-ante and achieved ERs with justification.**

Year	Ex-ante emissions reductions/removals	Achieved emissions reductions/removals	Percent difference	Justification for the difference
2021 (26-March-2021 to 31-December-2021)	23,024	40,610	+76%	Unexpected start of operations, especially on SCTP beneficiaries
2022 (01-January-2022 to 30-September-2022)	76,211	60,349	-26%	Slower development on commercial model
<b>Total</b>	<b>99,235</b>	<b>100,959</b>		

# APPENDIX 1.1: REFERENCE DOCUMENTS

Ref	Document
/01/	Joint Project description and Monitoring Report titled: <ol style="list-style-type: none"> <li>Livelihoods Chitetezo Mbaula Project (version 3.0; dated: 10-November-2022)</li> <li>Livelihoods Chitetezo Mbaula Project (version 3.1; dated: 20-December-2022)</li> <li>Livelihoods Chitetezo Mbaula Project (version 3.2; dated: 04-January-2023)</li> <li>Livelihoods Chitetezo Mbaula Project (version 3.3; dated: 26-January-2023)</li> <li>Livelihoods Chitetezo Mbaula Project (version 3.4; dated: 14-February-2023)</li> <li>Livelihoods Chitetezo Mbaula Project (version 3.6; dated: 30-May-2023)</li> </ol>
/02/	Ex post estimations sheets VCS3262_ER_Livelihoods Chitetezo Mbaula Project_MS1_v1.0
/03/	Ex ante estimations sheets <ul style="list-style-type: none"> <li>VCS3262_ER_Livelihoods Chitetezo Mbaula Project Ex-Ante</li> <li>BFCT_UP_Malawi_LV_VCS3262_Analysis_3-stones and charcoal stoves_v1.0</li> <li>BFCT_UP_Malawi_LV_VCS3262_Analysis_3-stones only_v1.0</li> <li>BFCT_UP_Malawi_LV_VCS3262_Consolidated result_v1.0</li> </ul>
/04/	Evidence for the start date of the project VCS3262_LV_CarbonWaiver_CM_First Stove Sold
/05/	Technical specifications of the Chitetezo Mbaula as per catalog of clean cookstoves.- <a href="http://catalog.cleancookstoves.org/stoves/385">http://catalog.cleancookstoves.org/stoves/385</a>
/06/	Proof of right of VERs VCS3262_LV_CarbonWaiver_CM_First Stove Sold
/07/	Monitoring survey questionnaire template <ul style="list-style-type: none"> <li>CL_11_BS-SURVEY_FORM-893071000</li> <li>CL_11_MS-SURVEY_FORM-937561794</li> </ul>
/08/	Survey records for the monitoring period <ul style="list-style-type: none"> <li>CL_11_Baseline survey form screenshots</li> <li>CL_11_Monitoring survey form screenshots</li> </ul>
/09/	Database for the ICS distributed VCS 3262_Stove database
/10/	Evidence for unique identification of each of the ICS
/11/	fNRB calculation done by C4 EcoSolutions (Pty) Ltd. CAR 02 Malawi_Chitetezo Cookstoves_Calculation Sheet_23 Feb 2022
/12/	Investment Comparison analysis with NPV as financial indicator <ol style="list-style-type: none"> <li>VCS3262_NPV_V1.1</li> <li>NPV v6</li> </ol>
/13/	Training records VCS3262_Training Attendance Register

/14/	Evidence for the random sample selection for the parameters opted for monitoring survey VCS3262_LV_UP_malawi_sampling_full_MP1_v1.0
/15/	Sample sales records/warranty cards for the stove
/16/	End user consent/Carbon Credit waiver VCS3262_LV_CarbonWaiver_CM_First Stove Sold
/17/	Grievance Redress Policy & Procedure <ul style="list-style-type: none"> <li>CL_11_UP Malawi Policy, Safeguarding Children &amp; Vulnerable Adults, June 2018-1</li> <li>CL_11_Grievance Book</li> </ul>
/18/	Joint Validation and verification contract in between CCIPL and “Livelihoods Fund SICAV SIF”.
/19/	Declaration from the project proponent that the project is not creating any other form of environmental credit under any specific program. <ul style="list-style-type: none"> <li>CL_11_VCS_3262_b declaration claims other forms credits.docx</li> </ul>
/20/	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. <ul style="list-style-type: none"> <li>CL_11_VCS_3262_a declaration claims other GHG programs.docx</li> </ul>


## APPENDIX 1.2: BACKGROUND DOCUMENTS

Ref	Document
/B01/	VCS Requirements <ol style="list-style-type: none"> <li>VCS Standard (v4.4, dated 17-January-2023)</li> <li>VCS Program Guide (v4.3, dated 17-January-2023)</li> <li>VCS Validation and Verification Manual version (v3.2, dated 19-October-2016)</li> <li>Registration &amp; Issuance Process (v4.3, dated 17-January-2023)</li> <li>VCS Program Definitions version (v4.3, dated 21-December-2022)</li> </ol> VCS MR template version 4.2 (dated 21-December-2022)
/B02/	Applied baseline and monitoring methodology <ol style="list-style-type: none"> <li>VMR0006. version 1.1, “Methodology for Installation of High Efficiency Firewood Cookstoves”</li> </ol>
/B03/	Methodological Tool <ul style="list-style-type: none"> <li>CDM Tool 30 “Calculation of the fraction of non-renewable biomass” Version 03.0</li> <li>CDM Tool 01” Tool for the demonstration and assessment of additionality” version 7.0.0</li> </ul>
/B04/	<ol style="list-style-type: none"> <li>“Standard for sampling and surveys for CDM project activities and programme of activities” (version 09.0)</li> <li>Guidelines for sampling and surveys for CDM project activities and Programme of Activities (version 04)</li> </ol>
/B05/	Website and links: <ol style="list-style-type: none"> <li>IPCC (<a href="http://www.ipcc-nggip.iges.or.jp">http://www.ipcc-nggip.iges.or.jp</a>)</li> <li><a href="http://cdm.unfccc.int">http://cdm.unfccc.int</a></li> <li><a href="http://www.v-c-s.org">http://www.v-c-s.org</a></li> <li><a href="https://www.fao.org/3/cb0032en/cb0032en.pdf">https://www.fao.org/3/cb0032en/cb0032en.pdf</a></li> </ol>

## 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 <sub>2</sub>	Carbon Dioxide
CO <sub>2e</sub>	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
VC SA	Verified Carbon Standard Association
VCU	Verified Carbon Unit
VVB	Validation Verification Body
VM	Validation and Verification Manual
VVS	Validation and Verification Standard

# 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:*

<input checked="" type="checkbox"/> Validator	<input checked="" type="checkbox"/> Verifier	<input checked="" type="checkbox"/> Team Leader	<input checked="" type="checkbox"/> Technical Expert
<input type="checkbox"/> Technical Reviewer	<input type="checkbox"/> Health Expert	<input type="checkbox"/> Gender Expert	<input type="checkbox"/> Plastic Waste Expert
<input checked="" type="checkbox"/> SDG+	<input checked="" type="checkbox"/> Social no-harm(S+)	<input checked="" type="checkbox"/> Environment no-harm(E+)	<input type="checkbox"/> CCB Expert
<input type="checkbox"/> Financial Expert	<input checked="" type="checkbox"/> Local Expert for India		

*in the following Technical Areas:*

<input type="checkbox"/> TA 1.1	<input checked="" type="checkbox"/> TA 1.2	<input type="checkbox"/> TA 2.1	<input checked="" type="checkbox"/> TA 3.1	<input type="checkbox"/> TA 4.1
<input type="checkbox"/> TA 4. n	<input type="checkbox"/> TA 5.1	<input type="checkbox"/> TA 5.2	<input type="checkbox"/> TA 7.1	<input type="checkbox"/> TA 8.1
<input type="checkbox"/> TA 9.1	<input type="checkbox"/> TA 9.2	<input type="checkbox"/> TA 10.1	<input type="checkbox"/> TA 13.1	<input type="checkbox"/> TA 13.2
<input type="checkbox"/> TA 14.1	<input type="checkbox"/> TA 15.1			


**Issue Date**  
1<sup>st</sup> January 2023




---

**Mr. Vikash Kumar Singh**  
Compliance Officer

**Expiry Date**  
31<sup>st</sup> December 2023




---

**Mr. Amit Anand**  
CEO

CCIPL\_FM 7.9 Certificate of Competency\_V2.1\_012023



## 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:*

- |  |  |   |  |
|--|--|---|--|
| <input checked="" type="checkbox"/> Validator          | <input checked="" type="checkbox"/> Verifier                             | <input checked="" type="checkbox"/> Team Leader             | <input checked="" type="checkbox"/> Technical Expert |
| <input checked="" type="checkbox"/> Technical Reviewer | <input type="checkbox"/> Health Expert                                   | <input type="checkbox"/> Gender Expert                      | <input type="checkbox"/> Plastic Waste Expert        |
| <input checked="" type="checkbox"/> SDG+               | <input checked="" type="checkbox"/> Social no-harm(S+)                   | <input checked="" type="checkbox"/> Environment no-harm(E+) | <input type="checkbox"/> CCB Expert                  |
| <input checked="" type="checkbox"/> Financial Expert   | <input checked="" type="checkbox"/> Local Expert for India and Sri Lanka |   |  |

*in the following Technical Areas:*

- |  |  |                                  |   |   |
|--|--|----------------------------------|---|---|
| <input checked="" type="checkbox"/> TA 1.1 | <input checked="" type="checkbox"/> TA 1.2 | <input type="checkbox"/> TA 2.1  | <input checked="" type="checkbox"/> TA 3.1  | <input type="checkbox"/> TA 4.1             |
| <input type="checkbox"/> TA 4. n           | <input type="checkbox"/> TA 5.1            | <input type="checkbox"/> TA 5.2  | <input type="checkbox"/> TA 7.1             | <input type="checkbox"/> TA 8.1             |
| <input type="checkbox"/> TA 9.1            | <input type="checkbox"/> TA 9.2            | <input type="checkbox"/> TA 10.1 | <input checked="" type="checkbox"/> TA 13.1 | <input checked="" type="checkbox"/> TA 13.2 |
| <input type="checkbox"/> TA 14.1           | <input type="checkbox"/> TA 15.1           |                                  |   |   |

Issue Date

1<sup>st</sup> January 2023

Expiry Date

31<sup>st</sup> December 2023



Mr. Vikash Kumar Singh  
Compliance Officer



Mr. Amit Anand  
CEO

## APPENDIX 4: FINDINGS LOG

Table 1. CLs from this Joint validation and verification

Finding	CL 01		
<b>Classification</b>	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding (VVB)</b>	In section 1.1 of the PD, PP has stated that, present <i>project promotes the distribution and utilization of clay made Chitetezo Mbaula (CM) stove to 120,000 households in Malawi</i> . However, during the on-site interviews, it was found that the number of households to be targeted is not clear. PP to clearly mention the number of households to be targeted under the project. PP to provide project implementation timelines.		
<b>Corrective Action or clarification #1</b> <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The initial target of the project was 50'000 households. Due to the current success of the project and its capacity to expand with the existing setup, it was decided to expand the scope to 120'000 households, which is the final total figure.  The tentative project implementation timeline is provided in the file " <i>CL1_implementation_timeline.xlsx</i> ".		
<b>WB Assessment #1</b> <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 Joint PD & MR and also the implementation timeline for the cookstoves which has been checked and confirmed by the verification team.		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed		

Finding	CL 02		
<b>Classification</b>	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding (VVB)</b>	In section 1.1 of the PD, PP has stated that, " <i>the CM stove substitutes the widespread traditional three stone open fire used for cooking...</i> " However, during the on-site visit, it was found that few households also used the charcoal stove in baseline. PP needs to clarify regarding the same.		
<b>Corrective Action or clarification #1</b> <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	Although paragraph 1.1 does not explicitly mention the use of charcoal, it is clearly mentioned in paragraph 1.13 : " <i>However, a baseline study of 151 households in the project intervention area shows that people in the project area still use traditional three-stone stoves/ open fires, charcoal stoves and other traditional stoves.</i> "		

Finding	CL 02
	<p>The use of charcoal is also integrated all along the ER calculations since it is included in the second scenario in the Baseline Fuel Consumption Tests (BFCT's). This is reflected in the files "BFCT_UP_Malawi_LV_VCS3262_Analysis_3-stones only_v1.0", and "BFCT_UP_Malawi_LV_VCS3262_Analysis_3-stones and charcoal stoves_v1.0.xlsx". The 2 analysis evaluate B<sub>old</sub> at 2.27 and 3.81 t<sub>biomass</sub>/hh/y respectively.</p> <p>Both scenarios are consolidated in the third file "BFCT_UP_Malawi_LV_VCS3262_Consolidated result_v1.0.xlsx", which does a weighted average of both scenarios according to their occurrence and evaluates B<sub>old</sub> at 2.47 t<sub>biomass</sub>/hh/y. This is the value which is used in the ER calculations in the file "VCS3262_ER_Livelihoods Chitetezo Mbaula Project_MS1_v1.0.xlsx".</p> <p>In conclusion, while the PDD might omit to mention charcoal in its section 1.1, the existence of charcoal stove is acknowledged in section 1.13, has been added in section 5.1 and the project fully accounts for the use of charcoal stoves in ER calculations.</p>
<p><b>VVB Assessment #1</b></p> <p><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></p>	<p>During the onsite visit 1 out of 11 HHs was observed to be using the charcoal stove. On further probing the end user it was clear that the charcoal stove was not the primary cookstove and hence it is used occasionally but not for cooking but grilling. The three stone fire was used frequently for cooking meals by the end users and the charcoal stove was used occasionally when there was an event or for cooking specific food items which was done 2-3 times in a month. Additionally, the usage of charcoal is also reflected in the ER calculations (VCS3262_ER_Livelihoods Chitetezo Mbaula Project_MS1_v1.0). Hence deemed acceptable.</p>
<p><b>Conclusion</b></p> <p><i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

Finding	CL 03
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding (VVB)</b>	PP to apply the latest version of the VCS standard and other VCS references, in the Joint PD & MR.

Finding	CL 03
<p><b>Corrective Action or clarification #1</b>  <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>The format is corrected in the PDD by re-applying the blank VCS template.</p> <p>The new PDD format is the file “CL3_VCS_PDD_MR_Livelihoods Chitetezo Mbaula Project v3.1.docx”</p> <p>To be noted : an additional correction is done for Project Proponent which becomes “Livelihoods Fund SICAV SIF” instead of “Livelihoods Venture”. Corresponding credentials are updated as well.</p>
<p><b>VVB Assessment #1</b>  <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></p>	<p>PP has provided the revised version of joint PD &amp; MR.</p> <p>However, PP is requested to provide relevant documents supporting the name change from “Livelihood venture” to “Livelihoods fund SICAV SIF”. Hence this finding remains open.</p>
<p><b>Conclusion</b>  <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

Finding	CL 04
<p><b>Classification</b></p>	<p><input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR</p>
<p><b>Description of finding (VVB)</b></p>	<p>In section 1.1 of the PD, PP has stated two approaches for distribution of the stove. 1<sup>st</sup> approach is targeting the beneficiaries of SCTP program and 2<sup>nd</sup> approach is the commercial model. However, during the on-site interviews it was found that, a third type of distribution approach is followed wherein, the household received stove as one of the incentives for participating in the kitchen performance test performed during the baseline survey. PP to clearly categorise the household that received stove as part of such incentive as these households might neither be beneficiaries under SCTP model nor the commercial model.</p>
<p><b>Corrective Action or clarification #1</b>  <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>Section 1.11 has been updated, see file “CL3_VCS_PDD_MR_Livelihoods Chitetezo Mbaula Project v3.1.docx”.</p>
<p><b>VVB Assessment #1</b>  <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></p>	<p>PP has provided the revised Joint PD &amp; with the third approach being included. This has been checked and confirmed by the verification team.</p>

Finding	CL 04
<b>Conclusion</b> Tick the appropriate checkbox	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed

Finding	CL 05		
<b>Classification</b>	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding (VVB)</b>	During the on-site interviews it was observed that the replacement of broken cookstoves was taking more than a month. case 1: the end users delayed in reporting regarding it to the promoter. case 2: the promoter was waiting for instructions from livelihoods /pp (which is twice a year). PP to clarify how broken stoves are excluded from the ER calculations. Also PP to explain on the O& M of the project.		
<b>Corrective Action or clarification #1</b> (PP shall write a detailed and clear corrective action or further information for clarification as per finding)	Broken stoves are excluded from the ER calculations through the usage rate parameter.  Stoves that were found broken during the monitoring survey are attributed an individual usage rate of 0% - with a very conservative approach -. Individual usage rates are then used to calculate the overall usage rate ( evaluated at 78% for the ongoing MP). Details of calculations are available in the file "VCS3262_MalawiCookstovesLV_MS1_Analysis_v1.0.xlsx".  The overall usage rate is then applied to the total Number of stove equivalents distributed. This is the step that accounts for broken stoves and delays of replacement in the ER calculations. Details of calculations are available in the file "VCS3262_ER_Livelihoods Chitetezo Mbaula Project_MS1_v1.0.xlsx". In the current MP, the usage rate of 78% roughly results in the exclusion of 7'700 stove equivalents out of the 35'000 considered in the MP.  Regarding the O/M, when a stove is broken, two scenario's are possible, whichever happens first : <ol style="list-style-type: none"> <li>1) The beneficiary calls the promoter for replacement</li> <li>2) The promoters notifies United Purpose of the condition of each stove after it-s bi-annual visit, which then proceeds to replacement</li> </ol>		
<b>VVB Assessment #1</b>	The justification provided by the PP is deemed acceptable by the verification team. Hence finding CL05 is closed.		

Finding	CL 05
<p><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></p>	
<p><b>Conclusion</b> Tick the appropriate checkbox</p>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed

Finding	CL 06		
<b>Classification</b>	<input type="checkbox"/> CAR	<input checked="" type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding (VVB)</b>	<p>As per section 3.2 (Application of methodology) of the Joint PD &amp; MR, the stove serial number / code should consist of stove production group, followed by year, month, and stove count number. However, during the on-site visit inconsistency was observed in the format of unique ID of one the project stoves. PP to clarify on reliability of the procedure to stamp the unique ID on the stove.</p>		
<p><b>Corrective Action or clarification #1</b> <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>SPG's have been trained on the formatting mentioned in the PDD. A quality assurance committee is present at each SPG level to ensure that stoves are produced according to standard. It also ensures serial numbers are written correctly on each stove.</p> <p>Some discrepancies have been encountered on stoves ID compared to the format mentioned in the PDD. Reinforcement of SPG's capacity is ongoing in the form of trainings, which is expected to improve compliance with the standard format. The possibility of returning future stoves with non-conform serial numbers is also under consideration.</p> <p>It is to be noted that while the format had encountered some discrepancies, the serial number does always properly correspond to the receipts.</p>		
<p><b>WB Assessment #1</b> <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></p>	<p>PP has provided the justification and line of action for the stoves ID discrepancies which are deemed acceptable to the verification team.</p>		
<p><b>Conclusion</b> Tick the appropriate checkbox</p>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed)		

Finding	CL 06
	<input checked="" type="checkbox"/> The finding is closed

Finding	CL 07
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding (VVB)</b>	In section 4.4 of the Joint PD & MR, for the total number of CM stoves in operation in the full monitoring period equivalent ( $N_{y,i,j}$ ) a new equation is used. PP to provide reference/citation for this equation as it is not a part of VMR0006 methodology.
<b>Corrective Action or clarification #1</b> <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	This equation was provided to illustrate the logic of counting stove equivalents. After CL_07, it is deemed that Excel calculations in the file "VCS3262_StoveDataBase.xlsx" are self-explanatory enough and that the equation is not required. Therefore the equation is removed from the PDD for clarity purpose.
<b>WVB Assessment #1</b> <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 updated joint PD & MR. This has been checked and confirmed by the verification team.
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed

Finding	CL 08
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding (VVB)</b>	PP to include crediting period with dates and unit for Net GHG emission reductions or removals in section 6.5.
<b>Corrective Action or clarification #1</b> <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	Updated in "CL3_VCS_PDD_MR_Livelihoods Chitetezo Mbaula Project v3.1.docx"
<b>WVB Assessment #1</b> <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 updated Joint PD & MR with the changes implemented. This has been checked and confirmed by the verification team.
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed

Finding	CL 09
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding (VVB)</b>	PP need to provide clarity regarding the frequency of monitoring parameter Number of equivalent project devices of age group $i$ , operating during year $y$ ( $N_{y,i}$ ) as it is different in section 5.2 and 5.3.
<b>Corrective Action or clarification #1</b> <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	The confusion came from the fact that : <ul style="list-style-type: none"> <li>• The total stove number is recorded continuously in the project database</li> <li>• The total equivalent stove number is based on the total stove number but is only computed biennially during monitoring surveys</li> </ul> The monitoring frequency of $N_{y,i}$ is therefore updated to biennially in section 5.2.
<b>VVB Assessment #1</b> <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 updated Joint PD & MR with the corrections done. This has been checked and confirmed by the verification team.
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed

Finding	CL 10
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding (VVB)</b>	As per the applied methodology VMRO06 version 1.1 “A default value of 0.1 shall be used if baseline device is a three-stone fire using firewood (not charcoal), or a conventional device with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney...”. <p>In section 5.1 of the joint PD &amp; MR, the parameter <math>\eta_{old}</math> value is considered to be 10% default , However during on site visit charcoal stove where used in baseline.</p> <p>Moreover, in the same section PP for the parameter <math>B_{old}</math> the source considered is “BFCT_UP_Malawi_LV_VCS3262_Analysis_3-stones and charcoal stoves_v1.0” but as per methodology “Where charcoal is used by baseline devices, a default wood to</p>

Finding	CL 10
	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 11” Joint PD and MR do not state the charcoal value.
<b>Corrective Action or clarification #1</b> <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	In ER calculations, ER is adjusted by the factor $\mu$ (12%) to account for the simultaneous use of other devices. Therefore no ER’s are claimed for charcoal stoves.  The wood to charcoal conversion factor of 6 kg firewood per kg of charcoal is used in the file “BFACT_UP_Malawi_LV_VCS3262_Analysis_3-stones and charcoal stoves_v1.0.xlsx”. Reference to the conversion factor has been added in section 5.1 in the source of data for B <sub>old</sub> .
<b>WB Assessment #1</b>  <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 to be acceptable by the verification team. Hence the finding CL10 is closed.
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed

Finding	CL 11
<b>Classification</b>	<input type="checkbox"/> CAR <input checked="" type="checkbox"/> CL <input type="checkbox"/> FAR
<b>Description of finding (VVB)</b>	Document required ; <ul style="list-style-type: none"> <li>• Scanned survey forms (for baseline and monitoring survey)</li> <li>• 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.</li> <li>• Declaration from the project proponent that the project is not creating any other form of environmental credit under any specific program.</li> <li>• Declaration on no double counting, target group, geographical boundaries and distribution mechanism</li> <li>• Grievance Redress Policy</li> <li>• Grievance register</li> <li>• monitoring service records</li> <li>• operations logbook</li> </ul>

Finding	CL 11
<p><b>Corrective Action or clarification #1</b>  <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<ul style="list-style-type: none"> <li>• Scanned survey forms (for baseline and monitoring survey)                             <ul style="list-style-type: none"> <li>○ See file “CL_11_BS-SURVEY_FORM-893071000.xls”</li> <li>○ See file “CL_11_MS-SURVEY_FORM-937561794.xls”</li> </ul> </li> <li>• 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.                             <ul style="list-style-type: none"> <li>○ See file “CL_11_VCS_3262_a declaration claims other GHG programs.docx “</li> </ul> </li> <li>• Declaration from the project proponent that the project is not creating any other form of environmental credit under any specific program.                             <ul style="list-style-type: none"> <li>○ See file “CL_11_VCS_3262_b declaration claims other forms credits.docx”</li> </ul> </li> <li>• Declaration on no double counting, target group, geographical boundaries and distribution mechanism                             <ul style="list-style-type: none"> <li>○ See file “CL_11_VCS_3262_c declaration no double counting.docx”</li> </ul> </li> <li>• Grievance Redress Policy                             <ul style="list-style-type: none"> <li>○ See file “CL_11_UP Malawi Policy, Safeguarding Children &amp; Vulnerable Adults, June 2018-1.pdf”</li> </ul> </li> <li>• Grievance register                             <ul style="list-style-type: none"> <li>○ See file “CL_11_Grievance Book.pdf”</li> </ul> </li> <li>• Monitoring service records                             <ul style="list-style-type: none"> <li>○ See file “CL_11_Stove Replacement Surveys.pdf”</li> </ul> </li> <li>• Operations logbook                             <ul style="list-style-type: none"> <li>○ See file “CL_11_Livelihoods Fund - Monday morning updates sample.pdf”</li> </ul> </li> </ul>
<p><b>WB Assessment #1</b>  <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></p>	<p>PP has provided the relevant documents which has been checked and confirmed by the verification team.</p>
<p><b>Conclusion</b>  <i>Tick the appropriate checkbox</i></p>	<p> <input type="checkbox"/> To be checked during the next periodic verification  <input type="checkbox"/> Outstanding finding (not closed)  <input checked="" type="checkbox"/> The finding is closed                 </p>

**Table 2. CARs from this Joint validation and verification**

Finding	CAR 01		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding (VVB)</b>	As per the § 3.17.4 of the VCS standard version 4.3, "The project proponent shall establish mechanisms for ongoing communication with local stakeholders to allow stakeholders to raise concerns about potential negative impacts during project implementation" PP needs to include the same in Joint PD &MR.		
<b>Corrective Action or clarification #1</b> (PP shall write a detailed and clear corrective action or further information for clarification as per finding)	United Purpose has a dedicated channel to collect concerns, anonymously if necessary. Those are detailed in the file "CAR_01 Channel for Reporting Concerns.pdf", available in Chichewa and English.  In addition, every customer receives a calendar with the main hotline number (see "CAR_01 LVF calendar2022.pdf").  Ads are available at the promoters' locations and contact numbers are widely advertised (radio, promoters shirts, signposts, see "CAR_01 ads.jpg" and "CAR_01 LVF Tshirt artwork2022.pdf"), which establish clear communication mechanisms for any stakeholder willing to pass messages to the project team.  This information is added in the PDD in Appendix 2.		
<b>VVB Assessment #1</b>  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.	PP has updated the joint PD & MR. This has been checked and confirmed by the verification team.		
<b>Conclusion</b> Tick the appropriate checkbox	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed		

Finding	CAR 02		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding (VVB)</b>	In section 5.1 of the Joint PD and MR, the fNRB value considered to be 98% as per the Third-party report.  However, it is found the VCS also has the different registered project in Malawi, PP to clarify on the conservativeness of the value applied. Also to provide the calculation sheet.		

Finding	CAR 02
<p><b>Corrective Action or clarification #1</b>  <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i></p>	<p>The calculation sheet is provided as “CAR_02 Malawi_Chitetezo Cookstoves_Calculation Sheet_23 Feb 2022.xlsx”.</p> <p>As detailed in the fNRB study summary, the finding are “supported by the consistent and widely reported deforestation rate and dynamics” observed for Malawi and is in accordance with various references listed in the study. For instance, the FAO Global Forest Ressources Assessment 2020 reports the following :</p> <p>Extent of forest :</p> <ul style="list-style-type: none"> <li>• 2010-2020 : -1.70%</li> </ul> <p>Extent of naturally regenerating forests:</p> <ul style="list-style-type: none"> <li>• 2010-2020 : -1.68%</li> </ul> <p>which places Malawi in the top 10 worldwide in terms of deforestation.</p> <p>The study has been conducted using remote sensing techniques and crosschecked with the latest literature available.</p>
<p><b>WB Assessment #1</b>  <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></p>	<p>The calculation sheet has been checked, and justification provided by PP is deemed to be acceptable by the verification team. Hence this finding is closed.</p>
<p><b>Conclusion</b>  <i>Tick the appropriate checkbox</i></p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

Finding	CAR 03		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding (VVB)</b>	As per section 5.1 of the Joint PD & MR, under parameter Life span it states “Cookstoves beyond their theoretical lifespan (4 years) are automatically excluded from the project database		

Finding	CAR 03
	<p>for ER calculations. Cookstoves out of order during the monitoring surveys are counted as not generating ER's."</p> <p>However, under section 1.11 PP states "The lifespan of this type of cookstove being about 4 years , , if/when a cookstove is damaged, non-functioning or exceeding its lifespan, the project will replace it by a new one . The replacement stove remains free for SCTP beneficiaries and is available at a - subsidized - discounted price of MWK 1,000 for the commercial model customers.</p> <p>PP to clarify on the same.</p>
<p><b>Corrective Action or clarification #1</b>                      (PP shall write a detailed and clear corrective action or further information for clarification as per finding)</p>	<p>When a cookstoves reaches the end of its lifespan of 4 years, it does not generate ER anymore. This is done by applying a cut-off date for each stove according to its commissioning date (i.e. 4 years later than commissioning) and not counting days after this cut-off date in ER calculations (to be noted that this case is not yet encountered in the project since all stoves are in age groups 0-1 and 1-2).</p> <p>At the same time, the expired stove is replaced by a new stove (either at 1000MK for commercial model or free of charge for SCTP beneficiaries or the third category) through the replacement mechanism. Therefore a new stove of age group 0-1 enters the project database and starts generating ER's.</p> <p>As detailed in section CL05, stoves found broken during monitoring surveys are totally excluded from ER calculations through the usage rate.</p>
<p><b>WVB Assessment #1</b>                      The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and WVB assessments (#2, #3, etc.) shall be added.</p>	<p>PP has provided the updated Joint PD &amp; MR, and the justification provided is deemed to be acceptable by the verification team.</p>
<p><b>Conclusion</b>                      Tick the appropriate checkbox</p>	<p><input type="checkbox"/> To be checked during the next periodic verification</p> <p><input type="checkbox"/> Outstanding finding (not closed)</p> <p><input checked="" type="checkbox"/> The finding is closed</p>

Finding	CAR 04		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding (VVB)</b>	PP has claimed SDG 15.2.1 that states “This project has reduced 50,288 tonnes during this monitoring period.” PP to provide the calculation for the same.  Also for the SDG 13, the value quoted is 100,595 this seems to be inconsistent and also mention the value is for monitoring period or 10 years crediting period.		
<b>Corrective Action or clarification #1</b> <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	Calculations for the 50’288 tonnes claimed under SDG 15.2.1 are detailed in the file “VCS3262_MalawiCookstovesLV_MS1_Analysis_v1.0.xlsx”, tab “results” lines 42 to 46.  For SDG13, the value 100,595 is corrected to 100,959, which was a typing mistake. The reference to the monitoring period is added.		
<b>VVB Assessment #1</b> <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 joint PD & MR. The calculation for SDG 15.1 is checked and confirmed by the verification team.		
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed		

Finding	CAR 05		
<b>Classification</b>	<input checked="" type="checkbox"/> CAR	<input type="checkbox"/> CL	<input type="checkbox"/> FAR
<b>Description of finding (VVB)</b>	PP to also to mention tool applicability criteria in section 3.2 of the Joint PD & MR.		
<b>Corrective Action or clarification #1</b> <i>(PP shall write a detailed and clear corrective action or further information for clarification as per finding)</i>	Updated in the file “CL3_VCS_PDD_MR_Livelihoods Chitetezo Mbaula Project v3.1.docx” in section 3.2 for the following tools : <ul style="list-style-type: none"> <li>• CDM TOOL01. Tool for the demonstration and assessment of additionality V07.0.0, Clean Development Mechanism (see ‘CDM_Tool01’01)</li> <li>• CDM Tool 30 Calculation of the fraction of non-renewable biomass EB 108 Annex 11 v3.0 2020</li> </ul>		
<b>VVB Assessment #1</b> <i>The assessment shall encompass all open issues in the finding. In case of non-</i>	PP has updated the joint PD & MR. Tool applicability criteria has been included in section 3.2. This has been checked and confirmed by the verification team.		

Finding	CAR 05
<i>closure, additional corrective action and VVB assessments (#2, #3, etc.) shall be added.</i>	
<b>Conclusion</b> <i>Tick the appropriate checkbox</i>	<input type="checkbox"/> To be checked during the next periodic verification <input type="checkbox"/> Outstanding finding (not closed) <input checked="" type="checkbox"/> The finding is closed