# INSTALLATION OF HIGH EFFICIENCY WOOD BURNING COOKSTOVES IN ZAMBIA- PROJECT 2

Document Prepared

Carbon Check (India) Private Ltd.

| | |
|---|---|
| Project Title | Installation of high efficiency wood burning cookstoves in Zambia – Project 2 |
| Version | 01 |
| Report ID | CCIPL1839/VCS/VER/IHEC |

| | |
|---|---|
| Report Title | Installation of high efficiency wood burning cookstoves in Zambia – Project 2 |
| Client | C-Quest Capital SGS Stoves Private Limited & C-Quest Capital Stoves Asia Limited |
| Pages | 62 |

| | |
|---|---|
| Date of Issue | 14-September-2023 |
| Prepared By | Carbon Check (India) Private Ltd. |
| Contact | Carbon Check (India) Private Ltd. Registered office:<br>2071/38, 2nd floor,<br>Naiwala, Karol Bagh,<br>New Delhi- 110005, India.<br><br>Carbon Check (India) Private Ltd. Corporate office:<br>Unit No. 1701,<br>Logix City Centre Office Tower,<br>Plot No. BW-58, Sector 32,<br>Noida, Uttar Pradesh – 201 301<br>India<br>www.carboncheck.co.in<br>projects@carboncheck.co.in |
| Approved By | Vikash Kumar Singh, Compliance Officer |
| Work Carried Out By | Rishi Kishore Raychoudhury (Team Leader/ Technical Expert)<br>Jeni Miraclin Nifiya J (Trainee Assessor)<br>Butano Sinyunga (Local Expert)<br>C Indumathi (Technical Expert) |

**Summary:**

- A brief description of the verification and the project

**Verification:** Carbon Check (India) Private Ltd. (CCIPL) has been contracted on 20/04/2023 by C-Quest Capital SGS Stoves Private Limited /20/ to carry out the verification of voluntary greenhouse gas emission reductions generated by the Project Activity Instances, under the grouped project "Installation of high efficiency wood burning cookstoves in Zambia – Project 2". The verification is based on the desk review of the Monitoring report /01/, registered VCS PD and the corresponding validation report /12/, supporting emission reduction calculation spread sheets /02/ and other relevant supporting documents made available to the verification team by the project proponent accompanied by on-site interviews. This verification involves the period from 16- September -2022 to 31-March -2023 (including both the days).

**Project:** The project "Installation of high efficiency wood burning cookstoves in Zambia – Project 2", is a grouped project which employs VCS methodology; VMR0006 version 1.1 /B02/. The project entails the distribution of fuel-efficient stoves throughout the Republic of Zambia. 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 purpose and scope of verification

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

**Scope:** The scope of the verification is:

- To verify the project implementation and operation with respect to the registered VCS PD /12/.
- To verify the implemented monitoring plan with the registered VCS PD /12/ and applied baseline and monitoring methodology /B02/.
- To verify that the actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan.
- To evaluate the GHG emission reduction data 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 monitoring period 16- September -2022 to 31-March -2023
- 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 /B02/, 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) On-site assessment involving:

(i) Assessment of the implementation and operation of the proposed VCS grouped project activity as per the registered VCS PD /12/;

(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 registered VCS PD /12/;

(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 PD 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 verification

A risk-based approach has been followed to perform this verification. During the course of verification, a total of 08 findings were raised, which includes:

02 Corrective Action Request (CAR); 06 Clarification Requests (CLs);

All the findings are raised by VVB were successfully resolved by PP.

- Any uncertainties associated with the verification

The VCS Monitoring Report /01-b/, emissions reduction calculations /02/ along with the supporting documents provided are considered to be in line with all the VCS requirements /B01/. The verification team has detected no further uncertainties or quality restriction.

- **Summary of the verification opinion**

  In CCIPL's opinion, the emission reductions reported for the "Installation of high efficiency wood burning cookstoves in Zambia – Project 2" in the monitoring report are fairly and correctly stated. CCIPL is therefore able to certify that the emission reductions from the "Installation of high efficiency wood burning cookstoves in Zambia – Project 2" during the period from 16-September-2022 to 31-March-2023 is amount 404,403 $tCO_2$ equivalent.

# CONTENTS

# 1 INTRODUCTION

## 1.1 Objective

Carbon Check (India) Private Ltd. (CCIPL) has been contracted on 20-April-2023 by C-Quest Capital SGS Stoves Private Limited /20/ to undertake the verification of the project titled "Installation of high efficiency wood burning cookstoves in Zambia – Project 2" for the monitoring period 16-September-2022 to 31-March-2023 (including both days). Through the verification activities, it is to be confirmed that:

- The project is implemented as described in the VCS Project Description document /12/;
- 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 verification followed the requirements of the current version of the VCS Standard (Version 4.4) /B01-a/ and VCS Program Guide (version 4.3)/B01-b/ to ensure the quality and consistency of the verification work and the report.

## 1.2 Scope and Criteria

The verification of this project is based on the Monitoring Report of the 5th monitoring period /01-b/, registered VCS PD /12/, Emission reduction calculation spreadsheets /02/, supporting documents made available to the verifier and information collected through performing on-site interviews. Furthermore, publicly available information was considered as far as available and required.

CCIPL 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 verification is carried out on basis of the following requirements, applicable for this project activity:

- VCS Standard (v4.4) /B01-a/
- VCS Program Guide (v4.3) /B01-b/
- 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 verification, by independent checking of objective evidence, is as follows:

- To verify that the project is implemented as described in the registered VCS PD.
- 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 does 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 Level of Assurance

The verification report is based on the Monitoring report /01-b/, registered VCS PD /12/, supporting documents, made available to the verifier and information collected through performing on-site interviews.

The verification has been planned and organised to achieve a

☒ Reasonable level of assurance as per VCS Standard (v4.4) /B01-a/

☐ 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 "Installation of high efficiency wood burning cookstoves in Zambia – Project 2", is a grouped project, which employs the VCS methodology; VMR0006 version 1.1 /B02/. The grouped project involves distribution and installation of fuel-efficient improved cook stoves (ICS) in Zambia. The project will disseminate 500,000 fuel efficient (ICS) TLC-CQC Rocket stove through 4 years and each year consist of 125,000 ICS. Number of ICS distributed in the 5th Monitoring Period is 41,556 ICS and total ICS distributed till the end of 5th monitoring period is 183,941. The TLC-CQC Rocket stove will reduce the amount of non-renewable biomass used for cooking. PP has considered each ICS distributed as a project activity instance. The start date for the grouped project is 14-October-2020 /03/ which is the date of installation/registration of the first stove in the grouped project.

The project proponent for the project activity is C-Quest Capital Stoves Asia Limited and C-Quest Capital SGS Stoves Private Limited owns the rights to VERs /17/.

The total estimated GHG emission reductions achieved from Project activity instances are 404,403 $tCO_2e$ for this monitoring period from 16- September -2022 to 31- March -2023.

The project activity has been implemented as described in the registered VCS PD /12 / and the emission reductions are calculated conservatively as per the applied methodologies /B02/.

# 2 VERIFICATION PROCESS

## 2.1 Method and Criteria

The method and criteria used for verification:

The verification consists of the following three phases:

1. Completeness check and desk review of the registered VCS PD/12/, validation report, monitoring plan, monitoring report /01-b /, 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 interviews (including follow-up interviews with project stakeholders, when deemed necessary). The on-site interviews include the following:

- An assessment of implementation and operation of project activity with respect to validated VCS PD/12/
- Review of information flows for generating, aggregating and reporting the monitoring parameters;
- Interview with relevant personnel to determine whether the operational and data collection procedures are implemented and in accordance with the monitoring plan of the validated VCS PD /12 /
- Cross check of information and data provided in the monitoring report/01-b/ 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 registered VCS PD and methodology requirements.

3. Resolution of outstanding issues and the issuance of the final Verification report and as applicable the VCS 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 monitoring plan 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 monitoring report (version 1, dated 14-August -2023) /01-a/ was initially reviewed and CCIPL requested the PP to present the supporting information and documents /03/-/20/. The documents were reviewed by CCIPL. Through the process of the verification, the revised monitoring report and the supporting documents were evaluated to confirm the actions taken by the PP to resolve the CARs and CLs issued by the verification 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 on-site interview process and further identifies personnel, including their roles, who were interviewed and/or provided information additional to that provided in the project description, Monitoring report /01-b/ and any supporting documents.

**Table 01:- onsite interviews:**

| Sr. No. | Date | Name | Organisation | Topic | Persons Interviewed |
|---|---|---|---|---|---|
| /1/ | 27/08/2023 to 28/08/2023 | Chrispine Mbewe | C-Quest Capital (CQC) | • Project Design<br>• Project Implementation status<br>• Project start date and Project Location<br>• Baseline Scenario<br>• Baseline Identification and Additionality<br>• Qualification and Training<br>• Monitoring and reporting documentation<br>• Quality Assurance – Management and operating system<br>• Social and Environm | Rishi Kishore Raychoudhury and Butano Sinyunga |

| | | | | | |
|---|---|---|---|---|---|
| | | | | ental Impacts<br>• Local Stakeholders meeting process<br>• Compliance with relevant laws<br>• Roles and responsibility | |
| /2/ | 27/08/2023 to 28/08/2023 | Chandan Kumar Sah | C-Quest Capital (CQC) | • Project Design<br>• Project Implementation status<br>• Project start date and Project Location<br>• Baseline Scenario<br>• Baseline Identification and Additionality<br>• Qualification and Training<br>• Monitoring and reporting documentation<br>• Quality Assurance – Management and | Rishi Kishore Raychoudhury and Butano Sinyunga |

| | | | | | |
|---|---|---|---|---|---|
| | | | | operating system<br>• Social and Environmental Impacts<br>• Local Stakeholders meeting process<br>• Compliance with relevant laws<br>• Roles and responsibility | |
| /3/ | 27/08/2023 to 28/08/2023 | Moses Mwenda (Field Assistance) | COMACO | • Procedure for data collection<br>• Robustness and accuracy of data collection and transfer<br>• Training provided for conducting the survey<br>• Competence of survey team | Rishi Kishore Raychoudhury and Butano Sinyunga |
| /4/ | 27/08/2023 to 28/08/2023 | Maxwell Kasonkomona (Field Assistance) | C-Quest Capital (CQC), Regional Manager | • Procedure for data collection<br>• Robustness and accuracy | Rishi Kishore Raychoudhury and Butano Sinyunga |

| | | | | | |
|---|---|---|---|---|---|
| | | | | of data collection and transfer<br>• Training provided for conducting the survey<br>• Competence of survey team | |
| /5/ | 28/08/2023 | Abel Njobyu (Field Support Officer) | C-Quest Capital (CQC) | • Procedure for data collection<br>• Robustness and accuracy of data collection and transfer<br>• Training provided for conducting the survey<br>• Grievance and handling procedures | Rishi Kishore Raychoudhury and Butano Sinyunga |
| /6/ | 27/08/2023 | Leonard Phiri Spouse of Pesulani Banda (Stove 1 ID CQCVZM0308475, Stove 2 ID CQCVZM0308476) | End user | Onsite interviews (Ex-post parameters)<br>• To check Number of project devices operating during year y (Ny,j,j) | Rishi Kishore Raychoudhury and Butano Sinyunga |

| | | | | | |
|---|---|---|---|---|---|
| | | | | • Baseline Scenario<br>• Additionality | |
| /7/ | 27/08/2023 | Susan Phiri relative of Rahabe Banda (Stove 1 ID CQCVZM0241448, Stove 2 ID CQCVZM0241450) | End user | Onsite interviews (Ex-post parameters)<br>• To check Number of project devices operating during year y (Ny,j,j)<br>• Baseline Scenario<br>• Additionality | Rishi Kishore Raychoudhury and Butano Sinyunga |
| /8/ | 27/08/2023 | Catherine Phiri (Stove 1 ID CQCVZM0274144, Stove 2 ID CQCVZM0274437) | End user | Onsite interviews (Ex-post parameters)<br>• To check Number of project devices operating during year y (Ny,j,j)<br>• Baseline Scenario<br>• Additionality | Rishi Kishore Raychoudhury and Butano Sinyunga |
| /9/ | 27/08/2023 | Malesi Banda (Stove 1 ID CQCVZM0301746), Stove 2 ID CQCVZM0301747) | End user | Onsite interviews (Ex-post parameters)<br>• To check Number of project devices operating during | Rishi Kishore Raychoudhury and Butano Sinyunga |

| | | | | | |
|---|---|---|---|---|---|
| | | | | year y (Ny,j,j)<br>• Baseline Scenario<br>• Additionality | |
| /10/ | 27/08/2023 | Masauso Banda (Stove 1 ID CQCVZM0242161, Stove 2 ID CQCVZM0242045) | End user | Onsite interviews (Ex-post parameters)<br>• To check Number of project devices operating during year y (Ny,j,j)<br>• Baseline Scenario<br>• Additionality | Rishi Kishore Raychoudhury and Butano Sinyunga |
| /11/ | 28/08/2023 | Babra Tembo (Stove 1 ID CQCVZM0311181, Stove 2 ID CQCVZM0311180) | End user | Onsite interviews (Ex-post parameters)<br>• To check Number of project devices operating during year y (Ny,j,j)<br>• Baseline Scenario<br>• Additionality | Rishi Kishore Raychoudhury and Butano Sinyunga |
| /12/ | 28/08/2023 | Mornica Mwanza spouse of Richard Banda (Stove 1 ID CQCVZM0314993, Stove 2 ID | End user | Onsite interviews (Ex-post parameters)<br>• To check Number of project devices operating | Rishi Kishore Raychoudhury and Butano Sinyunga |

| | | | | | |
|---|---|---|---|---|---|
| | | CQCVZM031 4994) | | during year y (Ny,j,j)<br>• Baseline Scenario<br>• Additionality | |
| /13 / | 28/08/2023 | ElizabethTembo ( Stove 1 ID CQCVZM031 5668, Stove 2 ID CQCVZM031 5669) | End user | Onsite interviews (Ex-post parameters)<br>• To check Number of project devices operating during year y (Ny,j,j)<br>• Baseline Scenario<br>• Additionality | Rishi Kishore Raychoudhury and Butano Sinyunga |
| /14 / | 28/08/2023 | WilliamTembo relative of Pricila Tembo (Stove 1 ID CQCVZM031 9104, Stove 2 ID CQCVZM031 9105) | End user | Onsite interviews (Ex-post parameters)<br>• To check Number of project devices operating during year y (Ny,j,j)<br>• Baseline Scenario<br>• Additionality | Rishi Kishore Raychoudhury and Butano Sinyunga |
| /15 / | 28/08/2023 | Thomas Phiri spouse of Joyce mumba (, Stove 1 ID CQCVZM030 5912, Stove 2 ID | End user | Onsite interviews (Ex-post parameters)<br>• To check Number of project | Rishi Kishore Raychoudhury and Butano Sinyunga |

| | | | | | |
|---|---|---|---|---|---|
| | | CQCVZM0305913) | | devices operating during year y (Ny,j,j)<br>• Baseline Scenario<br>• Additionality | |
| /16/ | 28/08/2023 | Elenia Phiri (Stove 1 ID CQCVZM0323209, Stove 2 ID CQCVZM0323210) | End user | Onsite interviews (Ex-post parameters)<br>• To check Number of project devices operating during year y (Ny,j,j)<br>• Baseline Scenario<br>• Additionality | Rishi Kishore Raychoudhury and Butano Sinyunga |

Apart from the monitoring survey, VVB has also interviewed the beneficiary and confirmed regarding the baseline cookstove (i,e, Three stone fire) and used prior to the implementation of the project stove and additionality whether the stove are distributed free of cost as per the registered VCS PD/12/. Furthermore, through document review registration certificate cum consent deed signed by the beneficiary, VVB could verify that all new instances comply with the 10% efficiency requirement as per the applied methodology /B02/.

## 2.4 Site Visits

Carbon Check has conducted an on-site inspection from 27/08/2023 to 28/08/2023. In line with paragraph 26 of the Sampling Standard, the verification team has applied acceptance sampling approach during on-site interviews on the sampling survey as part of verification. The project participant had applied sampling approach. A representative Monitoring survey /07/ was conducted by the representatives of Project participant. The verification team has chosen acceptance sampling in accordance with paragraph 28 of the sampling standard /B04/.

PP has applied sampling for the current monitoring period. A confidence/precision level of 90/10 has been used by the PP for all the monitoring parameters determined through applying simple

random sampling for this monitoring period, under this grouped project for calculating sample size as mentioned below as per Section 4.3 of the Monitoring report /01-b /

The sample size calculations for each of the monitoring parameters monitored through the sampling have been provided in section 4.4 below. As the calculated sample size was 48, in accordance with the paragrapgh14 of the sampling standard version 09 /B04/, required sample size of 48 has been chosen when the parameter of interest is a proportion (Ny,i,j).PP has by default seen 96 samples as each household has 2 ICS distributed of the same model. Monitoring survey has been carried out for the required samples. Hence it is in accordance with the sampling plan provided in the registered VCS PD /12/.

Applying paragraph 39 of the sampling standard, version 09 /B04/, a sample size of 11 ICS was chosen. A random sample size of 11 ICS was determined, based on an AQL of 0.5% and UQL of 20%, producer risk 10% and consumer risk 10%. Acceptance number thus determined for the sample is 0. However, VVB interviewed 22 samples (as all 11 Household onsite interviewed have 2 ICS each). Most of the household were distributed with two cookstoves, so by default VVB has seen, checked and verified both ICS at the premises of the 22 random samples household interviewed during the onsite visit. From the sampling survey done by project participants.

The information provided in the sampling survey data /07/, has been cross checked during the on-site interviews conducted. As a part of acceptance sampling, the verification team could confirm that 100% of the stoves were in use and the sampling survey data with no discrepant records. Thus, PP's set of records has been accepted in line with paragraph 33 of the sampling standard, version 09 /B04/.

The verification team carried out on-site interviews with representatives of PP in order to assess the information included in the project documentation and to gain additional information regarding the compliance of the project with the relevant criteria applicable for the VCS.

## 2.5 Resolution of Findings

CCIPL, during this verification, identified issues related to the monitoring, implementation or operation of the VCS project that could impair the capacity of the proposed VCS project to achieve project emission reductions or influence the reporting of emission reductions. CCIPL has identified, discussed these issues within the Verification report in Appendix 4.

- 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 verification team identified 02 CARs and 06 CLs. All CAR and CLs raised by Carbon Check during this verification has been successfully resolved by PP. If this was not completed, the ERs cannot be certified and recommended for issuance to the VCS Registry.

### 2.5.1 Forward Action Requests

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

CCIPL has not raised any FAR during this verification.

## 2.6 Eligibility for Validation Activities

The project activity falls under sectoral scope 03 and the CCIPL is accredited for validation / verification of project activities under this scope.

Further in line with section 3.23.9 of the VCS Standard, version 4.4, the "producer(s) or retailer(s) of the impacted good or service are known but not involved in the project or do not have a website".

PP will inform the manufacturers of the project stoves and the implementation partner that the Verified Carbon Units (VCUs) may be issued for the greenhouse gas emission reductions and removals under this grouped project.

For these VCUs, the PP will be claiming carbon credits under VERRA. PP will further apprise that the ownership of these credits lies exclusively with C-Quest Capital Stoves Asia Limited & C-Quest Capital SGS Stoves Private Limited to avoid any potential risk of double claiming of Scope 3 emissions.

Verification team has provided the copies of the emails /18/ and weblinks, this has been checked and verified by the verification team deemed appropriate and inline with the VCS standard requirements/B01/.

# 3 VALIDATION FINDINGS

## 3.1 Participation under Other GHG Programs

It has been confirmed through the description in PD /12/ 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 grouped project is not participating under any other GHG programs.

## 3.2 Methodology Deviations

There is no methodology deviation identified during the current monitoring period.

## 3.3 Project Description Deviations

There is no project description deviation identified during the current monitoring period.

## 3.4 Grouped Project

The grouped project (the project) entails the dissemination of energy efficient stoves for cooking purposes. A total of 183,941 ICS was disseminated till the end of this 5th monitoring period. The total estimated GHG emission reductions achieved from Project activity instances are 404,403 $tCO_2e$ for this monitoring period from 16- September -2022 to 31-March -2023. Therefore, as described in the registered project document/12/, for each new instance (installed ICS) the eligibility criteria below confirm the new project activity instances in the assessment below:

The number of new project activity Instances added to the project in this verification period, under this grouped project PP has considered each ICS as a project activity instance which is deemed acceptable as per the VCS Program Definitions /B01-e/ and VCS Standard/B01-a/. The eligibility criteria of the Project Activity Instance were established at the grouped project validation in the VCS PD /12/.

Quality and completeness of evidence, data and documentation relating to the new project activity instances:

The assessment team has reviewed the evidences collected by the PP for each of the PAI included in this verification and confirmed the following;

- Implementation and operational status of the PAI
- Monitoring and data collection
- Flow of information; generating, aggregating and reporting of the monitoring parameters
- Conformance of the new project activity instances with the eligibility criteria set out in the project description.

The verification team assessed the appropriateness of new project activity instances (added to the grouped project) against the requirements of the following key elements defined in section 3.2.11 of the Validation and Verification Manual (version 3.2) /B01-c/:

**Table 1 :- Eligibility Criteria for new project activity instances**

| Key Element | Requirements /B01-c/ | VVB Assessment |
|---|---|---|
| Geographic Areas | VVBs must ensure that the project description clearly identifies the geographic areas within which new | The verification team reviewed the sales record database /08/ and by further conducting |

| | | |
|---|---|---|
| | instances may be added. Geographic areas must be defined using geodetic polygons and provided in a KML file. Such geographic areas need not be contiguous and may be large or small, noting the grouped project requirements for additionality and baseline assessments of the geographic area. | interviews with representatives of PP to confirm that all new project activity instances are located within the geographical area identified in the registered VCS PD /12/. All new project activity instances are located within the host country of Republic of Zambia.<br>This is deemed appropriate to the verification team. Thus, the requirements of this key element is met. |
| Identification of baseline scenario and demonstration of additionality: | The assessment of baseline scenario and additionality is based upon the initial instances included within each geographic area. VVBs must ensure that, for each project activity, a single baseline scenario exists for each geographic area. VVBs must also ensure for each project activity that additionality is demonstrated across the entirety of each geographic area. Failing this, VVBs must require that the geographic areas are redefined such that the requirements are met. As with projects with multiple instances, project activity instances within a grouped project should be part of the same investment decision if they are to be included in a single project. | The verification team reviewed the sales record database /08/, conducted interviews with representatives of PP and further based on its sectoral expertise confirms that baseline scenario for each project technology and geographic area, as identified in section 3.4 of the registered VCS PD /12/, is applicable to the corresponding new project activity instances under the specific technology, PP will replace the traditional three stone fire cookstove with the improved efficient cook stove, where the usage of the firewood would be reduced by the ICS. In addition, the verification team further confirms that each new project activity instance included within the grouped project follows the additionality.<br>Thus, it has been demonstrated that for each project activity instance included in grouped project. |

| | | |
|---|---|---|
| | | • Baseline scenario exists (corresponding to the project technology and also the fuel type used by the traditional cook stove.)<br>• VVB has reviewed the registration cum consent deed/03/ signed by each household, Also, during the onsite visit interview with the end users VVB could confirmed that the end users received the project stove for free of cost. Hence, the requirements of additionality are being complied with for the entirety of geographic area within which they are installed. Hence, The requirements of additionality are being complied with for the entirety of geographic area within which they are installed.<br>This is deemed appropriate to the verification team. Thus, the requirements of this key element have been met by all the new project activity instances added to the grouped project. |
| Eligibility criteria | VVBs must ensure that an appropriate set of eligibility criteria are established for each combination of project activity and geographic area. The criteria are used to validate new project activity instances, essentially serving as a checklist to determine whether the instances share the same attributes as the initial set of validated project activities instances. In general, VVBs must | PP has provided the applicability of each of the eligibility criteria for all the project instances in section 3.3 of the MR /01-b/ which is in compliance with the VCS PD /12/.<br>Based on the assessment provided, the verification team concludes that each new project activity instance meets the appropriate set of eligibility criteria (as defined in VCS PD) |

| | | |
|---|---|---|
| | ensure that the eligibility criteria are developed sufficiently that such determinations could be made when validating new instances. Eligibility criteria must also conform to any restrictions set out in the methodologies applied. | and thus shares the same attributes as the initial set of validated project activity instances. Thus, the verification team deems them to be appropriate for inclusion in the grouped project.<br>This is deemed appropriate to the verification team. Thus, the requirements of this key element have been met by all the new project activity instances added to the grouped project. |
| Monitoring and GHG information system | VVBs must ensure that the project has an appropriate monitoring plan that includes a sampling plan to collect data from all project activity instances and information systems, allowing for centralized data collection. VVBs must ensure the sampling plan is able to generate statistically significant results. | The verification team reviewed the VCS MR /01-b/ and further conducted interviews with representatives of PP to confirm that the monitoring plan and procedures mentioned therein (which includes the sampling plan) is in conformance to the requirements laid out in the VCS PD /12/. Moreover, according to the monitoring plan the PP is responsible for collecting and storing data. The verification team further confirms that new project activity instances will conform to the monitoring plan requirements and procedures stated therein.<br>However, as per specific requirements of the applied methodologies VMR0006, version 1.1/B02/, sampling for monitoring the project under methodologies has taken place during the current monitoring period. Based on the review of the applied methodologies and |

| | | |
|---|---|---|
| | | VCS PD this is deemed to be acceptable to the verification team.<br>Refer to section 4.1 below for detailed discussion on monitoring activities.<br>This is deemed appropriate to the verification team. Thus, the requirements of this key element have been met by all the new project activity instances added to the grouped project. |
| Methodology | Grouped projects can apply methodologies other than those designed specifically for grouped projects. When reviewing the methodology and the project's application of it, VVBs must be mindful of any capacity limits applicable to the methodology. VVBs need only ensure that project activity instances and clusters adhere to such capacity limits; the grouped project as a whole may exceed the capacity limit. | The verification team reviewed the MR /01-b/, sample electronic sales records (Tally records) for new project activity instances, sales records spreadsheets /08/ and further conducted interviews with representatives of PP to confirm that all new project activity instances comply with the requirements of their respective applied methodologies /B02/. Furthermore, it is confirmed that no methodologies other than those designed specifically for grouped projects have been applied. Moreover, all new project activity instances comply with the respective capacity limits as per the applied methodologies.<br>This is deemed appropriate to the verification team. Thus, the requirements of this key element has been met by all the new project activity instances added to the grouped project. |

Based on the above assessment the verification team confirms that inclusion of project activity instances in the grouped project is valid and inline as per the registered VCS PD /12/.

# 4 VERIFICATION FINDINGS

## 4.1 Project Implementation Status

The grouped project, "Installation of high efficiency wood burning cookstoves in Zambia – Project 2" is registered under VERRA as a VCS project on (VCS Project ID 2371) applying the VCS methodology VMR0006 version 1.1 "Methodology for Installation of High Efficiency Firewood Cookstoves" /B02/.

The project "Installation of high efficiency wood burning cookstoves in Zambia – Project 2", is a grouped project, which employs the VCS methodology; VMR0006 version 1.1 /B02/. The grouped project involves distribution and installation of fuel-efficient improved cook stoves (ICS) in Zambia. The project will disseminate 500,000 fuel efficient (ICS) TLC-CQC Rocket stove through 4 years and each year consist of 125,000 ICS. The total ICS disseminated till the end of 5th monitoring period is 183,941 units. The TLC-CQC Rocket stove will reduce the amount of non-renewable biomass used for cooking. PP has considered each ICS distributed as a project activity instance.

Verification team confirms following during this monitoring period on site visit:

- The start date for the grouped project is 14-October-2020 /03/ which is the date of installation/registration of the first stove in the grouped project.
- There is no change of physical features from the registered VCS PD/12/ which may impact the emission reductions of the project activity. This has been confirmed based on the review of sales records /08/, conducting interviews with representatives of PP as well as by carrying out on-site interviews with end users. Thus, the verification team concludes that, all the physical features of the VCS grouped project in the registered VCS PD/12/ are in place.
- Verification team confirms that this is the 5th monitoring under VCS and covers the activity from 16-September-2022 to 31-March-2023 (inclusive of both dates). VCS crediting period is of 10 years with 14-October-2020 as the start date of the 1st crediting period.
- The verification team confirms that till the end of current monitoring period (16-September-2022 to 31-March-2023) the VCS grouped project has disseminated 183,941 units of ICS. This was confirmed based on the review of sales records /08/ and further based on interviews with representatives of PP through on-site interviews.

As per the section 1.1 of the MR/01-b/, PP has provided the audit history as below:

| Audit Type | Period | Program | VVB Name | Number of years |
|---|---|---|---|---|
| Validation | 11-December-2021 | VCS | Carbon Check (India) Private Limited | - |
| 1st MP Verification | 14-October-2020 to 15-April-2021 | VCS | Carbon Check (India) Private Limited | 0.50 |
| 2ndMP Verification | 16-April-2021 to 15-October-2021 | VCS | Earthood Services Private Limited | 0.50 |
| 3rd MP Verification | 16-October-2021 to 28-February-2022 | VCS | Carbon Check (India) Private Limited | 0.37 |
| 4th MP verification | 01-March-2022 to 15-September-2022 | VCS | Carbon Check (India) Private Limited | 0.55 |
| 5th MP verification | 16-September-2022 to 31- March -2023 | VCS | Carbon Check (India) Private Limited | 0.54 |

This has been checked by the verification team and is deemed accurate, also the same VVB has performed the validation and subsequent verification for this project.

Verification team concludes the following:

There are no material discrepancies between project implementation and the project description found in current monitoring period. However, the monitoring plan is implemented completely and monitoring system (i.e., process and schedule for obtaining, recording, compiling, and analyzing the monitored data and parameters) is appropriate. There are no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology/B02/.

During the on-site interviews for verification, QA/QC procedures were identified which demonstrate that: operational and management system of the grouped project is in place; data were centralized; monitoring data were crosschecked with the sales records stored and confirmation that all operational staff were trained before taking up positions. The verification team thus confirmed that the monitoring of the project activity has been implemented in accordance with the monitoring plan in the registered VCS PD.

The registered VCS PD clearly describes the monitoring and responsibility of monitoring is done by PP. During the on-site interviews, monitoring, data collection and reporting procedures were confirmed with the relevant staff and through document review of samples of all relevant records.

The verification team confirms that the monitoring plan is in accordance with VCS approved methodologies VMR0006 version 1.1 /B02/. All data are collected and archived in accordance with the applied methodologies and included in the monitoring plan. This was confirmed based on the on-site interviews with representatives of PP and upon further review of samples of all relevant records.

The project is not involved in any other form of GHG emission program and VCUs generated from this verification will not be used for other trading program to avoid any kind of double counting. The same is confirmed by the PP during the on-site audit. Assessment team also conducted independent review regarding the same and found that the statement of the PP is accurate, and project is not involved in any other kind of GHG trading for the present monitoring period/17/.

Further in line with section 3.23.9 of the VCS Standard, version 4.4, the "producer(s) or retailer(s) of the impacted good or service are known but not involved in the project or do not have a website".

PP will inform the manufacturers of the project stoves and the implementation partner that the Verified Carbon Units (VCUs) may be issued for the greenhouse gas emission reductions and removals under this grouped project. For these VCUs, the PP will be claiming carbon credits under VERRA. PP will further apprise that the ownership of these credits lies exclusively with C-Quest Capital SGS Stoves Private Limited and C-Quest Capital Stoves Asia Limited to avoid any potential risk of double claiming of Scope 3 emissions.

Verification team has been provided with the copies of the emails /18/, this has been checked and verified by the verification team deemed appropriate and inline with the VCS standard requirements/B01-a/.

All the ex-ante parameters which are used in the calculation of emission reductions are consistent with the VCS PD /12/. It is confirmed that ex-ante parameters mentioned in section 4.1 of the MR /01/ are in line with the parameters mentioned in section 5.1 of the VCS PD/12/. All the ex-post parameters have been monitored as per the monitoring plan and presented in section 4.2 of the MR /01-b /.

## 4.2 Safeguards

### 4.2.1 No Net Harm

Not applicable as the project does not pose any potential negative environmental and socio-economic impact.

- The project does not coerce the population into any practice or habit which they are not willing to take up as the cooking practice or habit on the project stove is similar to what was practiced before implementing this project activity, i.e., on the baseline stove.

- The project activity promotes gender equality as it intends to reduce the burden on women in the most vulnerable communities by reducing the fuel wood consumption. The amount of time spent collecting fuel wood and cooking will be reduced. Women will have more time for other pursuits. The risk of being exposed to gender-based violence will also reduce.

- The project is neither involved in any activity that would bring environmental deterioration nor will lead to any emission of toxic substances. The project stoves will rather reduce emissions due to the increased thermal efficiency compared to the baseline stoves.

- There are no threats anticipated in terms of negative effects on the local economy. Moreover, the locals will also be employed as a result of this project activity. Thereby improving the economic growth in the region where the project activity has been implemented.

### 4.2.2 Local Stakeholder Consultation

The Local Stakeholder Consultation meetings were held on 26-October-2020 and 25-November-2020 throughout the validation and are detailed in section 2.2 of the monitoring report /01-b/. The Local Stakeholder consultation was carried out at grouped project level, which was validated by the validation team during the VCS PD /12/ validation.

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 registered PD /12/ and MR /01-b/.

The local implementation partners have the responsibility to take grievances regarding the project activity and same will be conveyed to PP during operation of project activity. Thus, ongoing communication of stakeholders is followed through grievance mechanism. The audit team has checked through onsite audits with the end users, few grievances has been received during the fifth monitoring period and has been stated under section 2.2 of the MR/01-b/. This has been checked during the onsite visit by the verification team. The Project Proponent has reported its feedback and grievance redressal procedure in Section 2.2 of the MR /01-b/, and the policy is outlined in the document “Project Grievance Redress Mechanism” /15/. In the opinion of assessment team, based onsite 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.

As per VCS PD /12/ and further confirmed during onsite interviews, in case the end-users have a provision to approach CQC through their village chief. The village chief then reports the

concerns to the concerned person, i.e., field staff from CQC who takes it further and resolves the issue. In The opinion of VVB, this would protect the traditional sentiments and value system of the villages and help them express their issues without any hesitation and deemed appropriate to the VVB.

Few grievances were received during this MP regarding Missing Lost pins for adjusting pot skirt, lost pot rest (stove metal part), and Project stove produces smoke have been resolved by PP via the grievance redressal mechanism/15/ and resolution has been mentioned under section 2.2 of the MR/01/. From the on-site interviews and based on document review /01-b/, grievance register records/15/, it can be confirmed that grievance redressal procedure has been designed and is implemented according to section 2.2 of the MR /01-b/ and that it is effective in its aim.

The verification team confirms on the procedure and method for engagement, method for documenting the outcomes of local stakeholders' consultation and account of all inputs received. The verification team 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/07/, this has been checked by the verification team during the onsite interviews. Hence the verification team deemed the local stakeholders ongoing communication as appropriate.

## 4.3 AFOLU-Specific Safeguards

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

## 4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The equations and choices provided in the methodology as well as all other methodological tools, are correctly quoted in the Monitoring report /01-b/. The emission reductions of the project instances of the grouped project and project activity instance are calculated using the formulae mentioned in the applied methodology; VMR0006 version 1.1/B02/. The verification team reviewed the emission reduction spread sheets and checked all the formulae, concluding that they are correct and in accordance with the monitoring plan of the PD and the applied monitoring methodology.

According to applied methodology VMR006 (version 1.1) /B02/ the emissions are calculated as below:

Baseline Emission

$$ER_y = \sum_i \sum_j ER_{y,i,j}$$ 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 $CO_2e$ |
| $ER_{y,i,j}$ | = | Emission reductions by improved cookstove of type i and batch j during year y in t $CO_2e$ |

$$ER_{y,i,j} = B_{y,savings,i,j} \times NCV_{wood\ fuel} \times f_{NRB,y} \times \left(EF_{wf,CO2} + EF_{wf,non\ CO2}\right) \times N_{y,i,j} \times 0.95 \quad \text{Equation (2)}$$

Where,

| | | |
|---|---|---|
| $B_{y,savings,i,j}$ | = | Quantity of woody biomass that is saved in tonnes per improved cookstove of type i and batch j during year y |
| $f_{NRB,y}$ | = | Fraction of woody biomass that can be established as non-renewable biomass ($f_{NRB}$) |
| $NCV_{wood\ fuel}$ | = | Net calorific value of the non-renewable woody biomass that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/tonne) |
| $EF_{wf,CO2}$ | = | $CO_2$ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 $tCO_2/TJ$) |
| $EF_{wf,non\ CO2}$ | = | Non-$CO_2$ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 26.23 $tCO_2/TJ$) |
| $N_{y,i,j}$ | = | Number of improved cookstoves of type i and batch j operating during year y |
| 0.95 | = | Discount factor to account for leakage |

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

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

Where,

| | | |
|---|---|---|
| $\eta_{old}$ | = | Efficiency of baseline cookstove |

| | | |
|---|---|---|
| $\eta_{new,y,i,j}$ | = | Efficiency of the improved cookstove type *i* and batch *j*, determined using Equation 5 of the methodology. |
| $B_{y=1,new,i,j,survey}$ | = | Annual quantity of woody biomass used by improved cookstoves in tonnes per device of type *i* and batch *j*, determined in the first year of the implementation of the project through a sample survey. |

$$\eta_{new,y,i,j} = \eta_p \times (DF_n)^{y-1} \times 0.94 \quad \text{Equation (4)}$$

Where,

| | | |
|---|---|---|
| $\eta_p$ | = | Efficiency of project stove (fraction) at the start of project activity. |
| $(DF_n)^{y-1}$ | = | Discount factor to account for efficiency loss of project cookstove per year of operation (fraction). This value may be based on actual monitoring or based on manufacturer's declaration on expected loss in efficiency or through publicly available literature on relevant industry standards. Alternatively default value of 0.99 efficiency loss per year can be considered. |
| 0.94 | = | Adjustment factor to account for uncertainty related to project cookstove efficiency test. |

**Leakage Emissions:** In accordance with methodology VMR0006 version 1.1, leakage is considered as default 0.95.

Sampling approach:

As assessed in this section, emission reductions for the project "Installation of high efficiency wood burning cookstoves in Zambia Project-2" has being claimed for this monitoring period and the total population of the stoves for this monitoring period (16-September-2022 to 31-March -2023) is 183,941 ICS.

The sampling plan implemented by the PP is in accordance with the applied approved monitoring methodology /B02/ and the VCS PD /12/. The PP has appropriately performed Simple random Sampling procedure, reliability levels were set at 90% confidence and 10% precision in line with the applied methodology VMR 0006 version 1.1/B02/. As the VCS PD /12/ mentions the option for Simple random Sampling procedure, it is acceptable to the verification team.

The sampling surveys have been carried out by the well-trained personnel /11/. Monitoring parameters $N_{y,j,j}$ 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 /07/ and sample size calculation/10/. Parameter $N_{y,j,j}$ monitors the number of stove in operation..

PP has applied sampling for the current monitoring period. A confidence/precision level of 90/10 has been used by the PP for all the monitoring parameters determined through applying simple random sampling. Monitoring survey has been carried out to check the parameter of interest is a proportion ($N_{y,j,j}$) . However, PP has applied simple random sampling this is in accordance with the sampling plan provided in the registered VCS PD /12/. The sample size calculations for each of the monitoring parameters monitored through the sampling have been provided in the table below. As the calculated sample size were 48, in accordance with the paragraph 14 of the sampling standard version 09 /B04/, a minimum sample size of 48 has been chosen when the parameter of interest is a proportion ($N_{y,j,j}$ ). PP has chosen 95 responded samples using the sample size calculation as;

$$n \geq \frac{1.645^2 \text{ x } 183{,}941 \text{ x } 0.85\ (1-0.85)}{(183{,}941-1) \text{ x } 0.1^2 \text{ x } 0.85^2 + 1.645^2 \text{ x } 0.85\ (1-0.85)} = 47.74$$

Under this project activity two stoves were distributed in one household. Survey team also surveyed the second stove. Therefore, during this survey total 95 stoves were surveyed, as PP has applied the simple random sampling out of 95 ICS, all 95 stoves are in operation, Thus, pp has applied 100% survey result. This approach is deemed appropriate to the verification team.

**The resultant applied sample size by the PP are summarized below:**

| Parameters | $N_{y,i,j}$ |
|---|---|
| Sample size | 95 |
| Precision achieved | 0% |

During verification, VVB used sampling to determine the operational status of the households. Given that Zambia is a Least Developed Country, a sample size of 11 random stoves was chosen using paragraph 39 (c) of the sampling standard, version 09 /B04/. A random sample size of 11 was determined, 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 22 samples (as all 11 Household onsite interviewed have 2 ICS each). Each household were distributed with two cookstoves, so by default VVB checked and verified both ICS at the premises of each Household interviewed during the onsite visit samples for monitoring 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 MR /01/ and ER sheet /02/ and thus c=0. Thus, PP's set of records has been accepted in line with paragraph 33 of the sampling standard, version 09 /B04/. Verification team has cross verified these sample documents.

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

1. Number of project devices operating during year y ($N_{y,j,j}$)

Simple random sampling was applied by the PP for selection of the monitoring samples with 90/10 confidence/precision for determining the sampling for all the parameters which is deemed acceptable as per the VCS PD /12/ and in review with the sampling sheet/10/.PP has applied the sampling plan as per the registered VCS PD/12/.

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.

**Table 2:- Parameter selected during Monitoring**

| Parameter | How the PP conducted sampling surveys (to obtain the project participants' or the coordinating/managing entities' records) | How the VVB could obtain records for verification | Criteria for deciding what ultimately constitutes a discrepancy |
|---|---|---|---|
| Number of project devices operating during year y ($N_{y,j,j}$) | Sampling based survey (questionnaire survey/interviews)<br>Visual inspection of the premises to see if ICS is operational and in use. Interview with end user if required to verify that ICS is still in use [Yes/No] | Cross-check of a sample of project participants' samples (questionnaire operation surveys/interviews) including but not limited to following:<br>• Consistency between the information as contained in Survey sheet and revealed from the on-site interviews<br>• Baseline scenario of the household, focusing on the usage of the fuel type and type of stove used in the baseline.<br>• Enquire/observe the pre-project/baseline stove/s and its operation during the project scenario. | VVB results, accounting for duly justified differences. |

The sampling plan implemented by the PP is in accordance with the applied approved monitoring methodology /B02/ and the VCS PD /12/. The PP has appropriately performed Simple random Sampling procedure in line with the applied methodology. As the VCS PD /12/ mentions the option for Simple random Sampling procedure, it is acceptable to the verification team.

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.

Emission reductions have been calculated in accordance with the applied methodology VMR0006 version 1.1 /B01/, and VCS PD /12/. 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.

**Table 3:- Parameters Determined ex-ante:**

The following parameters are determined ex-ante and mentioned in section 5.1 of the VCS PD/12/:

| Parameter | Unit | Value | Assessment |
|---|---|---|---|
| $f_{NRB,y}$ | Fraction | 0.81 | -Fixed ex-ante<br>-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<br>- Default values from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 1 Introduction have been used. |
| $EF_{wf,CO2}$ | $tCO_2/TJ$ | 112 | - Fixed ex-ante<br>- Default values from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion have been used. |
| $EF_{wf,non\ CO2}$ | $tCO_2/TJ$ | 26.23 | - Fixed ex-ante<br>- Default values from the 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion have been used. |
| $\eta_{old}$ | Fraction | 0.1 | - Fixed ex-ante<br>- Default values from the methodology. |
| $\eta_p$ | Fraction | 0.345 | - Fixed ex-ante<br>-Manufacturers specification. |

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) /08/, Monitoring Report /01-b/, and applied methodology /B01/. 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.

Manufacture of ICS

PP promotes end user to build the stove themselves (mud and brick structure) and then PP provides all metal parts to end user at the time of registration of the ICS in project database. PP is providing free of cost replacement for the metal parts in case it is damaged or broken throughout the crediting period of the project. All end users have been trained to repair the mud and brick structure in case of any cracks or damage.

Considering the above, it can be confirmed that TLC Rocket stove can easily survive the project lifetime of 10 years due to ease of repair and free replacement of metal parts.

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

Table 4:- Parameters monitored ex-post

| Monitoring Parameter Requirement | Assessment/ Observation by the VVB |
|---|---|
| Data / Parameter:<br>(as in monitoring plan of VCS PD): | Number of project devices of type i and batch j operating during year y ($N_{y,i,j}$) |
| Measuring frequency/Time Interval: | At least once every two years |
| Reporting frequency: | At least once every two years |
| Reported value: | 183,941 |
| 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 /07/ |
| Is accuracy of the monitoring equipment as stated in the VCS PD? If the VCS PD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise? | NA |

| | |
|---|---|
| Calibration frequency /interval:<br><br>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 PD? If the VCS PD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise? | NA. QA/QC procedures stated in MR comply with VCS PD /12/ |
| 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 monitoring survey records /07/ and the ER sheet /02/. |
| How were the values in the monitoring report verified? | NA |
| Does 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 |

<table>
<tr><th>Monitoring Parameter Requirement</th><th>Assessment/ Observation by the VVB</th></tr>
<tr><td>Data / Parameter:<br><br>(as in monitoring plan of VCS PD):</td><td>Efficiency of the improved cookstove type i and batch j during year y ($\eta_{new,y,i,j}$ )</td></tr>
<tr><td>Measuring frequency/Time Interval:</td><td>Annually</td></tr>
<tr><td>Reporting frequency:</td><td>Annually</td></tr>
<tr><td>Reported value:</td><td>
<table>
<tr><th>Year (y)</th><th>$\eta_{new,y,i,j}$</th></tr>
<tr><td>1</td><td>32.43%</td></tr>
<tr><td>2</td><td>32.11%</td></tr>
<tr><td>3</td><td>31.78%</td></tr>
<tr><td>4</td><td>31.47%</td></tr>
<tr><td>5</td><td>31.15%</td></tr>
<tr><td>6</td><td>30.84%</td></tr>
<tr><td>7</td><td>30.53%</td></tr>
<tr><td>8</td><td>30.23%</td></tr>
<tr><td>9</td><td>29.92%</td></tr>
<tr><td>10</td><td>29.63%</td></tr>
</table>
</td></tr>
<tr><td>Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)</td><td>Yes</td></tr>
<tr><td>Details of monitoring equipment:</td><td>Value is calculated in the ER spread sheet /02/</td></tr>
<tr><td>Is accuracy of the monitoring equipment as stated in the VCS PD? If the VCS PD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise?</td><td>NA</td></tr>
<tr><td>Calibration frequency /interval:<br><br>Is it monitoring methodology /CDM EB guidance / local or national standards / manufacturers specification</td><td>NA</td></tr>
</table>

| | |
|---|---|
| Is the calibration interval in line with the monitoring plan of VCS PD? If the VCS PD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise? | NA. QA/QC procedures stated in MR comply with VCS PD /12/ |
| 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 /01-b/ has been compared with the ER sheet /02/. |
| How were the values in the monitoring report verified? | NA |
| Does 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:<br>(as in monitoring plan of VCS PD): | Annual quantity of woody biomass used by improved cookstoves in tonnes per device of type i and batch j ($B_{y=1,new,i,j,survey}$) |
| Measuring frequency/Time Interval: | In the first year of project implementation |

| | |
|---|---|
| Reporting frequency: | In the first year of project implementation |
| Reported value: | 1.2264 (Tonnes per device per year) |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Yes |
| Details of monitoring equipment: | Value obtained through calculation/02/ |
| Is accuracy of the monitoring equipment as stated in the VCS PD? If the VCS PD does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise? | NA |
| Calibration frequency /interval:<br><br>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 PD? If the VCS PD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise? | Calibration of weighing scales used for measuring the fuel wood was done in house before start using on site. QA/QC procedures stated in MR /01-b/ comply with VCS PD /12/ |
| 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/. At the time of first monitoring survey, the surveyor enquired for firewood consumption for each stove installed in the household. PP during the current MP, has conservatively considered the average usage rate of ICS i.e., 6.7188 days/week being captured |

| | |
|---|---|
| | during the current monitoring survey from representative samples and the same has been applied in apportioning of emission reductions. The same can be verified from the ER calculation excel spreadsheet /02/. |
| How were the values in the monitoring report verified? | NA |
| Does 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 /07/ 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:<br>(as in monitoring plan of VCS PD): | 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: | 10 years |
| Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No) | Yes |
| Details of monitoring equipment: | Value obtained from Manufacturer specification /04/ |
| Is accuracy of the monitoring equipment as stated in the VCS PD? If the VCS PD | NA |

| | |
|---|---|
| does not specify the accuracy of the monitoring equipment, does the monitoring equipment represent good monitoring practise? | |
| Calibration frequency /interval:<br><br>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 PD? If the VCS PD does not specify the frequency of calibration, does the selected frequency represent good monitoring practise? | NA. QA/QC procedures stated in MR comply with VCS PD /12/ |
| Company performing the calibration (internal or external calibration): | NA |
| Did calibration confirm proper functioning of monitoring equipment? (Yes / No): | NA |
| Is (are) calibration(s) valid for the whole reporting period? | NA |
| If applicable, has the reported data been cross-checked with other available data? | Yes, the reported data in MR has been compared with the ER sheet /02/. |
| How were the values in the monitoring report verified? | NA |
| Does 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 /07/ 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 | NA |

| | |
|---|---|
| possible been applied or has a request for deviation been approved? | |

PP has conducted monitoring survey after the end date of MP which is accurate and representative of the project performance during the MP duration 16-September-2022 to 31-March-2023.

Verification team 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 PD /12/. The total number of emission reductions for the monitoring period (16-September-2022 to 31-March-2023) is 404,403 $tCO_2e$.

**Table 5 :Emission Reductions claimed before this monitoring period**

| Year | Baseline emissions or removals ($tCO_2e$) | Project emissions or removals ($tCO_2e$) | Leakage emissions ($tCO_2e$) | Net GHG emission reductions or removals ($tCO_2e$) |
|---|---|---|---|---|
| 2020 (14-October-2020 to 31-December-2020) | 4,461 | 0 | 0 | 4,461 |
| 2021 (01-January-2021 to 15-April-2021) | 13,856 | 0 | 0 | 13,856 |
| 2021 (16-April-2021 to 15-October-2021) | 75,954 | 0 | 0 | 75,954 |
| 2021 (16-October-2021 to 31-December-2021) | 79,889 | 0 | 0 | 79,889 |

| | | | | |
|---|---|---|---|---|
| 2022<br>(01-January-2022 to 28-February-2022) | 67,284 | 0 | 0 | 67,284 |
| 2022<br>(01-March-2022 – 15-September-2022) | 305,989 | 0 | 0 | 305,989 |
| **Total** | **547,433** | **0** | **0** | **547,433** |

The verification team has checked and confirmed the calculations in the spreadsheet and found to be accurate. The monitoring report is supported by emission reduction spreadsheet. The consistency and formula were verified and found to be accurate. The comparison of Ex-ante and Ex-Post has been provided by the PP in the section 5.4 of the MR/01-b/, and it clearly states the emission reduction is higher than the ex-ante assumed as all the cookstove are in operation and this has been also checked during the on site visit by the verification team, Hence the remark made by PP is deemed appropriate.

## 4.5 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/B02/. 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. The quality of supporting evidence submitted to the VVB for verification is adequate and found to be verifiable. The transfer of carbon rights and other supporting documents related to quality and maintenance were checked by the verification team during the site visit to confirm the authenticity of the documents and to check the correctness of the calculation/02/.

The verification team can confirm that sufficient evidence is available for the whole monitoring period and the same is verifiable and that the data collection system meets the requirements of the monitoring plan and the applied methodology according to the assessment carried out on site and in the document review. Verification team confirms that the quality of evidence to determine the GHG reductions and removals produced was found satisfactory. The detailed information flow with the roles and responsibilities of the individuals and the monitoring system have been provided in the VCS-MR/01-b/.

## 4.6 Non-Permanence Risk Analysis

The project activity was operational throughout the monitoring period. Hence there is no further requirement for the non-performance analysis rating during the monitoring period of the project activity.

# 5 VERIFICATION OPINION

The Project Participant, C-Quest Capital SGS Stoves Private Limited, has commissioned the VVB, Carbon Check (India) Private Ltd. to perform a verification of the VCS Project Activity “Installation of high efficiency wood burning cookstoves in Zambia – Project 2”. This report summarises the findings of the 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 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 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 project description/12/.

**Verification period:** From 16-Septemeber-2022 to 31-March-2023 (both days inclusive)

**Table 6: Verified GHG emission reductions and removals in the above verification period, broken down by calendar year:**

| Year | Baseline emissions or removals ($tCO_2e$) | Project emissions or removals ($tCO_2e$) | Leakage emissions ($tCO_2e$) | Net GHG emission reductions or removals ($tCO_2e$) |
|---|---|---|---|---|
| 2022<br>(16-September-2022 to 31-December-2022) | 209,198 | 0 | 0 | 209,198 |
| 2023<br>(01-January-2023 to 31-March-2023) | 195,205 | 0 | 0 | 195,205 |
| Total | **404,403** | **0** | **0** | **404,403** |

**Table 7: Comparison of Ex-Ante and Ex-Post Emission Reductions and Removals (ERR) values**

| Year | *Ex-ante emissions reductions/ removals* | ***Achieved emissions reductions/ removals*** | ***Percent difference*** | ***Justification for the difference*** |
|---|---|---|---|---|
| 2022- 2023 (16-September-2022 to 31-March-2023) | 340,140 | 404,403 | 18.89% | Actual emission reductions achieved are higher than the value estimated in ex-ante calculation due to 100% ICS being found operating during the monitoring survey as compared to the 10% annual loss rate assumed in VCS-PD. Also during site visit the verification team confirmed that that 100% of the stoves were in operation. |

The verification team has cross checked the detailed comparison of ERs (Ex-ante vs Actual ER) along with the justification provided in the ER calculation excel spreadsheet /02/ and the supporting Ex-Ante ER spreadsheet considering 0% stove loss rate /21/ submitted by the PP.

The verification team is of the opinion that the project has been implemented in accordance with the registered project description, the monitoring plan complies with the approved monitoring methodology. The monitoring was carried out in accordance with the monitoring plan, and that the monitored data and ER calculations were assessed and confirmed to be correct.

Therefore, CCIPL hereby certifies, and requests the issuance of, the reported ERs during the monitoring period of 16-September-2022 to 31-March-2023 amounting to 404,403 $tCO_2e$ to the VCS Registry.

# APPENDIX 1.1: REFERENCE DOCUMENTS

| Ref | Document |
|---|---|
| /01/ | a. Monitoring report Version 1, dated 14-August -2023<br>b. Monitoring report Version 1.1, dated 11-September-2023 |
| /02/ | ER calculation spread sheet |
| /03/ | Registration certificate cum consent deed as evidence for the start date of the grouped project |
| /04/ | Technical specifications of the TLC-CQC Rocket Stove including the life span. |
| /05/ | Employment Records |
| /06/ | Monitoring survey questionnaire template |
| /07/ | Survey records for the monitoring period |
| /08/ | Database for the ICS distributed and sales records for the monitoring period |
| /09/ | Registration cum consent deed as evidence for unique identification of each of the ICS |
| /10/ | Sample size and precision level achieved calculator for the monitoring period |
| /11/ | Training records: Attendance register |
| /12/ | VCS PD for the grouped project "Installation of high efficiency wood burning cookstoves in Zambia" version 3.0, dated 11-October -2021 and its corresponding validation |
| /13/ | PP User Manual and Procedure for Data Quality Check |
| /14/ | Previous MP 4 Monitoring report and verification report |
| /15/ | Scanned grievance logbook/register |
| /16/ | Spot audit report as evidence for monitoring of the ICS |
| /17/ | Declaration from the project proponent<br>• that the project is not creating any other form of environmental credit under any specific program.<br>• the project has not or shall not claim carbon credits under any other scheme after Registration of the project under VCS to avoid double counting. |
| /18/ | Emails sent to retailers and stove manufacturers as evidence for the project and potential risk of Scope 3 emissions double claiming. |
| /19/ | Onsite records |
| /20/ | Contract details- CCIPL and PP |
| /21/ | Ex-Ante ER Spreadsheet (considering 0% stove loss rate) |

# APPENDIX 1.2: BACKGROUND DOCUMENTS

| Ref | Document |
|---|---|
| /B01/ | VCS Requirements<br>a. VCS Standard (v4.4, dated 17/01/2023)<br>b. VCS Program Guide (v4.3, dated 17/01/2023)<br>c. VCS Validation and Verification Manual version (v3.2, dated 19/10/2016)<br>d. Registration & Issuance Process (v4.3, dated 17/01/2023)<br>e. VCS Program Definitions version (v4.3, dated 21/12/2022)<br>f. VCS MR template version 4.2 (dated 21/12/2022) |
| /B02/ | Applied baseline and monitoring methodology<br>a. VMR0006. version 1.1, "Methodology for Installation of High Efficiency Firewood Cookstoves" |
| /B03/ | Methodological Tool<br>• CDM Tool 30 "Calculation of the fraction of non-renewable biomass" Version 03.0 |
| /B04/ | a. "Standard for sampling and surveys for CDM project activities and programme of activities" (version 09.0)<br>b. Guidelines for sampling and surveys for CDM project activities and Programme of Activities (version 04) |
| /B05/ | Website and links:<br>1. IPCC (http://www.ipcc-nggip.iges.or.jp)<br>2. http://cdm.unfccc.int<br>3. http://www.v-c-s.org |

# APPENDIX 2: ABBREVIATIONS

| | |
|---|---|
| **CDM** | Clean Development Mechanism |
| **BE** | Baseline Emission |
| **CAR** | Corrective Action Request |
| **CCIPL** | Carbon Check (India) Private Ltd. |
| **CDM** | Clean Development Mechanism |
| **CL** | Clarification Request |
| **$CO_2$** | Carbon Dioxide |
| **$CO_{2e}$** | Carbon Dioxide Equivalent |
| **DOE** | Designated Operational Entity |
| **DPR** | Detailed project report |
| **DVR** | Draft Validation Report |
| **EB** | CDM Executive Board |
| **EF** | Emission Factor |
| **ER** | Emission Reduction |
| **FAR** | Forward Action Request |
| **FVR** | Final validation Report |
| **GHG** | Greenhouse gas(es) |
| **GWh** | Giga Watt Hour |
| **IPCC** | Intergovernmental Panel on Climate Change |
| **MW** | Mega Watt |
| **MWh** | Mega Watt Hour |
| **NA** | Not Applicable |
| **OSV** | On Site Visit |
| **PD** | Project Description |
| **PP** | Project Proponent |
| **QC/QA** | Quality control/Quality assurance |
| **TR** | Technical Review |
| **UNFCCC** | United Nations Framework Convention on Climate Change |
| **VCS** | Verified Carbon Standard |
| **VCSA** | Verified Carbon Standard Association |
| **VCU** | Verified Carbon Unit |
| **VVB** | Validation Verification Body |
| **VVM** | Validation and Verification Manual |
| **VVS** | Validation and Verification Standard |

# APPENDIX 3: CERTIFICATES OF COMPETENCE

Carbon CHECK

**Carbon Check (India) Private Limited**

## *Certificate of Competency*

**Mr. Rishi Raychoudhury**

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

*for the following functions and requirements:*

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

*in the following Technical Areas:*

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

**Issue Date**
**1st January 2023**

**Expiry Date**
**31st December 2023**

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Carbon CHECK

# Carbon Check (India) Private Limited

## Certificate of Competency

### Butano Sinyunga

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

*for the following functions and requirements:*

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

*in the following Technical Areas:*

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

**Issue Date**
**03rd May 2023**

**Expiry Date**
**02nd May 2024**

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

Carbon CHECK

# Carbon Check (India) Private Limited

## Certificate of Competency

### Ms. Indumathi C

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

*for the following functions and requirements:*

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

*in the following Technical Areas:*

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

**Issue Date**
1st January 2023

**Expiry Date**
31st December 2023

Mr. Vikash Kumar Singh
Compliance Officer

Mr. Amit Anand
CEO

CCIPL_FM 7.9 Certificate of Competency_V2.1_012023

# APPENDIX 4: FINDINGS LOG

**Table 1. CLs from this verification**

| Finding | CL 01 | | |
|---|---|---|---|
| **Classification** | ☐ CAR | ☒ CL | ☐ FAR |
| **Description of finding** *(DOE)* | *PP is requested to provide the following:*<br>• *Evidence for start date of grouped project.*<br>• *Technical specification along with evidence for efficiency.*<br>• *Proof for right of VER*<br>• *Monitoring survey questions*<br>• *Survey records for monitoring period*<br>• *Database for ICS distribution and sales records*<br>• *Registration cum consent deed as evidence for unique identification of each ICS*<br>• *Sample size and precision level achieved calculator for MP*<br>• *Training records*<br>• *Screenshot of random sample generator*<br>• *Sample sales/ warranty card*<br>• *Spot Audit report*<br>• *Grievances policy and scanned logbook.*<br>• *Records of LSCa*<br>• *Declaration from PP that the project is not creating any other form of environmental credit and the project has not or shall not claim carbon credits* | | |
| **Corrective Action or clarification #1** *(PP shall write a detailed and clear corrective action or further information for clarification as per finding)* | All the supporting documents requested by VVB are being shared for reference. | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* | PP has submitted the all the supporting documents to the verifier. Hence the CL is closed. | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | ☐ To be checked during the next periodic verification<br>☐ Outstanding finding (not closed)<br>☒ The finding is closed | | |

| Finding | CL 02 | | |
|---|---|---|---|
| **Classification** | ☐ CAR | ☒ CL | ☐ FAR |

| Finding | CL 02 |
|---|---|
| **Description of finding** *(DOE)* | *As per the paragraph 3.18.19 (1,2,3) of the VCS standard version 4.4 "The project proponent shall develop a grievance redress procedure to address disputes with local stakeholders that may arise during project planning and implementation, including with regard to benefit sharing. The procedure shall include processes for receiving, hearing, responding and attempting to resolve grievances within a reasonable time period, taking into account culturally appropriate conflict resolution methods. The procedure and documentation of disputes resolved through the procedure shall be made publicly available. The procedure shall have three stages:……"*<br><br>*PP to explain how the grievance of the beneficiaries are addressed as per the Grievance Policy.*<br><br>*Also, PP has stated under the same section 2.2 of the MR "During the current monitoring period four grievances were received from the end users related to stove maintenance, lost metal parts, stove usage, etc.".*<br><br>*PP shall provide evidence for closure of all grievances.* |
| **Corrective Action or clarification #1**<br>*(PP shall write a detailed and clear corrective action or further information for clarification as per finding)* | PP has a robust feedback and grievance redress policy and procedure in order to ensure that grievances of project-affected communities and individual stakeholders are properly handled and addressed.<br>During the current monitoring period, PP has received four grievances, and all has been addressed. All the grievances received, and actions being taken during the current monitoring period are provided in the table under section 2.2 of the VCS MR. The grievance register records also have been shared with VVB for reference. |
| **DOE Assessment #1**<br><br>*The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* | PP has mentioned about the grievances received during the current MP and action taken for address the grievances of the Household. PP has submitted grievance register picture as evidence for the same. Thus, PP has a robust feedback and grievance redress policy as per the requirement of VCS standard v4.4 para. 3.18.19. Hence, CL is closed. |
| **Conclusion**<br>*Tick the appropriate checkbox* | ☐ To be checked during the next periodic verification<br>☐ Outstanding finding (not closed)<br>☒ The finding is closed |

| Finding | CL 03 | | |
|---|---|---|---|
| **Classification** | ☐ CAR | ☒ CL | ☐ FAR |
| **Description of finding** *(DOE)* | *PP is requested to provide credible evidence for the following SDG parameters considered in the section 1.11 of the MR.*<br>1. *SDG 3.9*<br>2. *SDG 4.3*<br>3. *SDG 5.4*<br>4. *SDG 7.1*<br>5. *SDG 8.3*<br>6. *SDG 13.0*<br>7. *SDG 15.2* | | |
| **Corrective Action or clarification #1**<br>*(PP shall write a detailed and clear corrective action or further information for clarification as per finding)* | PP has submitted the below documents to VVB as evidence for the claimed SDGs.<br>1. Monitoring survey records capturing reduction in smoke, reductions in soot levels near cooking area, reduction in itchiness of eyes felt by respondents.<br>2. Training records provided to individuals associated with the project.<br>3. Monitoring survey records reflecting reduction in drudgery and gender inequality, especially for women and children by saving time spent in collecting fuel wood and cooking.<br>4. Database records of distributed project ICS.<br>5. Employment records of individuals directly and indirectly employed under the project activity.<br>6. Emission reduction calculation spreadsheet showing GHG reduction achieved during the current monitoring period.<br>7. ER calculation spreadsheet showing non-renewable biomass saved per stove during the current MP. | | |

| Finding | CL 03 |
|---|---|
| **DOE Assessment #1**<br><br>*The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* | 1) PP has submitted signed (surveyor & HH) survey form in which HH has mentioned that reduction in smoke is observed during the MP of the project activity. Hence, CL is closed.<br>2) PP has submitted attendance sheet of the training conducted in CQC head office on monitoring survey training along with the list of trainings conducted till now for the project activity. Hence, CL is closed.<br>3) PP has submitted signed (surveyor & HH) survey form in which HH has mentioned that their time of collecting firewood and cooking has reduced during the MP of the project activity. Hence, CL is closed.<br>4) PP has provided the database of the total distributed ICS which shows that project activity is contributing in SDG 7 (SDG indicator – 7.1.2). Hence, CL is closed.<br>5) PP has provided sample evidence for employment which leads to directly or indirectly employment. Hence, CL is closed.<br>6) PP has provided the ER calculation spreadsheet for the contribution of project activity in SDG 13 which VVB has crosschecked and found correct. Hence, CL is closed.<br>7) PP has provided the survey form in which HH has mentioned that in the MP of the project activity they required less firewood and PP has provided detailed calculation in ER calculation spreadsheet and saved approximately 1.20 tons of woody biomass per stove during this MP. Hence, CL is closed. |
| **Conclusion**<br>*Tick the appropriate checkbox* | ☐ To be checked during the next periodic verification<br>☐ Outstanding finding (not closed)<br>☒ The finding is closed |

| Finding | CL 04 | | |
|---|---|---|---|
| **Classification** | ☐ CAR | ☒ CL | ☐ FAR |
| **Description of finding** *(DOE)* | *During assessment of MR and ER sheet it has been observed that there is an increase of 18.89% in emission reduction for the current MP as compared to Ex-ante. PP shall explain the reason for this increase in emission reduction as compared to ex-ante.* | | |
| **Corrective Action or clarification #1**<br>*(PP shall write a detailed and clear corrective action or further information for clarification as per finding)* | Actual emission reductions achieved are 18.89% higher than the value estimated in the ex-ante calculation. This is because 100% of the ICS were found operating during the monitoring survey as compared to the 10% annual loss rate being assumed in the VCS-PD. The justification of the same has also been provided in section 5.4 of the VCS MR. | | |

| Finding | CL 04 |
|---|---|
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* | PP has now apportioned the ERs of the usage rate of ICS being captured and found the actual emission reduction achieved is now 18.89% higher than the estimated ex-ante since 100% of the ICS were found operating during the monitoring survey as compared to the 10% annual loss rate being assumed in the VCS-PD. Hence the CL is closed. |
| **Conclusion**<br>*Tick the appropriate checkbox* | ☐ To be checked during the next periodic verification<br>☐ Outstanding finding (not closed)<br>☒ The finding is closed |

| Finding | CL 05 | | |
|---|---|---|---|
| **Classification** | ☐ CAR | ☒ CL | ☐ FAR |
| **Description of finding** *(DOE)* | *In the section 1.1 of the MR, PP has mentioned that the last date of ICS installed in the 5th MP is 30-March-2023. PP to clarify why 31st of March 2023 is not considered as last date of ICS installation it is the end of the MP.* | | |
| **Corrective Action or clarification #1**<br>*(PP shall write a detailed and clear corrective action or further information for clarification as per finding)* | PP has considered 31st March 2023 as the MP end date, although the last date for ICS being installed under the current MP is 30th March 2023. This is because no distribution has happened on the day of 31st March 2023. The same can be verified from the shared database for the current MP. | | |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* | PP has submitted the database for the current MP. Verifier has cross checked and found that no distribution has happened on 31st March 2023 and hence 30th March 2023 is considered as last date of ICS distribution. Hence the CL is closed. | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | ☐ To be checked during the next periodic verification<br>☐ Outstanding finding (not closed)<br>☒ The finding is closed | | |

| Finding | CL 06 | | |
|---|---|---|---|
| **Classification** | ☐ CAR | ☒ CL | ☐ FAR |
| **Description of finding** *(DOE)* | *PP to clarify if the stoves are damage due to weather conditions and if some of the end users migrates. How do PP maintain the database in these cases.* | | |

| Finding | CL 06 |
|---|---|
| **Corrective Action or clarification #1**<br>*(PP shall write a detailed and clear corrective action or further information for clarification as per finding)* | PP has a robust database management system and migration of any end user or stoves that are reported to be in non-operation by our field coordinators or staff immediately gets removed from the database.<br>Field coordinators frequently visit their respective villages and any such cases if reported are informed to the country manager immediately. However, no such cases are reported during the current monitoring period. |
| **DOE Assessment #1**<br>*The assessment shall encompass all open issues in the finding. In case of non-closure, additional corrective action and DOE assessments (#2, #3, etc.) shall be added.* | PP has clarified that stoves that are reported to be in non-operation are removed immediately from the database. The clarification provided by the PP is deemed acceptable to the validation team. Hence, CL is closed. |
| **Conclusion**<br>*Tick the appropriate checkbox* | ☐ To be checked during the next periodic verification<br>☐ Outstanding finding (not closed)<br>☒ The finding is closed |

**Table 2. CARs from this verification**

| Finding | CAR 01 | | |
|---|---|---|---|
| **Classification** | ☒ CAR | ☐ CL | ☐ FAR |
| **Description of finding** *(VVB)* | *In the section 1.1 of the MR:*<br>• *Under table Installation of ICS: PP is requested to provide the number of instances added from the 1st MP to the current MP and then provide the total number of ICS distributed until the end of 5th MP.*<br>• *Under table Installation of ICS: PP has mentioned "Total no. of ICS distributed till end of 4th MP (15-September-2022) as 183,941" which is not inline to the previous MR.* | | |
| **Corrective Action or clarification #1**<br>*(PP shall write a detailed and clear corrective action or further information for clarification as per finding)* | PP has updated section 1.1 in the revised VCS MR providing the details of ICS installed in each monitoring period as requested.<br><br>There was a typo in the table and the same has been rectified in the revised VCS MR. | | |
| **VVB Assessment #1**<br>*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.* | In the section 1.1 of the revised MR:<br>• PP has incorporated the number of instances added from the 1st MP to the current MP and also provided the total number of ICS distributed in the revised MR.<br>• PP has rectified the table and found to be inline with the previous MR.<br><br>Hence the CAR is closed. | | |

| Finding | CAR 01 |
|---|---|
| **Conclusion**<br>*Tick the appropriate checkbox* | ☐ To be checked during the next periodic verification<br>☐ Outstanding finding (not closed)<br>☒ The finding is closed |

| Finding | CAR 02 | | |
|---|---|---|---|
| **Classification** | ☒ CAR | ☐ CL | ☐ FAR |
| **Description of finding** *(VVB)* | *In the section 5.4 of the MR:*<br>• *Under vintage 2: PP has mentioned number of days for vintage 2 is 199 days but considered 157 days in the year fraction calculation. Please rectify.*<br>• *Under the table Comparison of Ex-ante and achieved emission reduction and removals (ERR) values: PP has mentioned the MP end as 31-March-2022. Please rectify.* | | |
| **Corrective Action or clarification #1**<br>*(PP shall write a detailed and clear corrective action or further information for clarification as per finding)* | There were typos in section 5.4 of the VCS MR and the same has been rectified in the revised MR. | | |
| **VVB Assessment #1**<br>*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.* | In the section 5.4 of the revised MR:<br>• PP has rectified he number days for vintage 2 as 157 days and found to be consistent throughout the MR.<br>• PP has rectified the date to 31-March-2023 which is inline to the MP considered by PP.<br><br>Hence the CAR is closed. | | |
| **Conclusion**<br>*Tick the appropriate checkbox* | ☐ To be checked during the next periodic verification<br>☐ Outstanding finding (not closed)<br>☒ The finding is closed | | |

**Table 3. FARs from this verification**

No FAR has been raised in this verification.