



**Verified Carbon
Standard**

INSTALLATION OF HIGH EFFICIENCY WOOD BURNING COOKSTOVES IN ZIMBABWE – PROJECT 2

Document Prepared by

C-Quest Capital SGM ZM Stoves Private Limited

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1 PROJECT DETAILS

1.1 Summary Description of the Project

A summary description of the technologies/ measures to be implemented by the project.

The project involves distribution of fuel-efficient improved cookstoves (ICS) in Zimbabwe. The ICS disseminated through this project will replace the baseline cookstoves i.e., open fire or three stone fire.

Through this project, the distribution and installation of approximately 375,000 ICS will be undertaken for households in Zimbabwe. It is intended that under this project single pot, TLC-CQC Rocket Stove will be distributed. The average life span of the stove is 10 years. Each household will receive up to 2 ICS to meet their cooking requirements. TLC-CQC rocket stove has a simple design, improves the combustion of the fuel thereby resulting in increased heat transfer to pots and hence saving fuel. Improved combustion of fuel reduces the smoke produced and this reduces the health hazards from indoor air pollution. Quantity of firewood saved due to ICS will result in women & children spending less time collecting firewood and also reduce the rapidly progressing deforestation in Zimbabwe.

In this grouped project, each ICS constitutes a single project activity instance which is in line with the definition stated in VCS Program Definitions version 04.2. The end user will be informed in advance that the carbon credits generated through the use of ICS will belong to the project promoter generates carbon finance which in turn is used for waving away the cost or highly subsidizing the price of ICS and for recovering project implementation costs.

As of 15-September-2022, 202,006 ICS have been installed under this project.

The location of the project.

The project will be implemented in Zimbabwe. The details of the project location are provided in Section 1.12.

An explanation of how the project is expected to generate GHG emission reductions or removals.

The ICS will substitute the current practice of cooking on open fire stoves. The ICS burns wood more efficiently due to its improved design leading to proper fuel combustion, and more efficient thermal transfer to pots, hence saving fuel and lowering greenhouse gas emissions.

A brief description of the scenario existing prior to the implementation of the project.

The baseline scenario is the continued use of non-renewable wood fuel by the target population to meet similar thermal energy needs as provided by project cookstoves in absence of project activity.

An estimate of annual average and total GHG emission reductions and removals.

The average annual GHG emission reduction from the project is expected to be 868,550 tCO₂e.

1.2 Sectoral Scope and Project Type

The project is categorised under type/category as below:

- a) **Sectoral scope:** 03 - Energy demand.
- b) **Type:** II – Energy efficiency improvement projects.

The project is a grouped project.

1.3 Project Eligibility

The project involves energy efficient cookstove distribution which falls under the category of efficiency improvements in thermal applications, therefore it is eligible under the scope of VCS Program.

1.4 Project Design

The project is a grouped project.

Eligibility Criteria

For the inclusion of new project activity instances, the project proponent shall ensure that it meets the eligibility criteria below.

No.	Criterion	Compliance Requirement	Method of Evaluation
1.	Methodology	The project activity instance shall use VCS approved methodology - VMR0006: Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.1 and shall comply with its requirements.	Details of how the project activity meets the requirements of the methodology to be included in section 3.2 of project description document.
2.	Technology	The project activity instance shall implement improved cookstoves having minimum efficiency of 25% below which it shall not be eligible under this grouped project.	Manufacturer's specification shall be used for establishing minimum efficiency criteria in the first year of stove installation.

3.	Capacity Limits	Where a capacity limit applies to a project activity included in the project, no project activity instance shall exceed such limit. Further, no single cluster of project activity instances shall exceed the capacity limit, determined as follows: 1) Each project activity instance that exceeds one percent of the capacity limit shall be identified. 2) Such instances shall be divided into clusters, whereby each cluster is comprised of any system of instances such that each instance is within one kilometer of at least one other instance in the cluster. Instances that are not within one kilometer of any other instance shall not be assigned to clusters. 3) None of the clusters shall exceed the capacity limit and no further project activity instances shall be added to the project that would cause any of the clusters to exceed the capacity limit.	No project activity instance shall exceed the applicable limit, which is 180 GWh_{th}/y. The expected annual energy saving for each project activity instance is approximately 0.02 GWh_{th}/y or 0.01% of the limit. As the annual energy saving is below 1% of the limit, therefore no project activity instance is identified and divided into clusters. Calculation sheet demonstrating adherence to this criterion to be submitted to VVB.
4.	Project Location	Each project activity instance shall be located within the geographic boundary of Zimbabwe.	Self-declaration to demonstrate that project boundary is within the geographical boundary of Zimbabwe.
5.	Start date	The start date of project activity instances shall be same as or later than the grouped project activity start date.	ICS distribution/registration data recorded in project database.
6.	Additionality	Each project activity instance shall demonstrate its compliance with a. Regulatory surplus The project should not be mandated by any law, statute or other regulatory framework, or for UNFCCC non-Annex I countries, any systematically enforced law, statute or other regulatory framework b. Positive List	a. Regulatory Surplus There is no law, statute or government programme or policy in Zimbabwe mandating the project activity nor is there any systematically enforced law, statute or other regulatory framework for such projects hence this requirement is satisfied for all project activity

		The inclusion of new project activity instances shall have to comply with positive list that is the ICS are installed/distributed at zero cost to end user and the project activity instance has no other source of revenue but GHG credits.	instances to be included in the current grouped project. b. Positive List Self-declaration/ individual ICS registration form or any other documentary evidence mentioning that end users were not charged for the ICS. Same can be confirmed during validation/verification.
7.	Target Population	End user for each project activity instance shall be households with non- renewable biomass on inefficient wood or charcoal stoves. Each ICS will be assigned a unique serial number with name of ICS user, address, GPS of household, stove model, distribution date, etc	End user registration certificate and stove installation database.
8.	Baseline Scenario: Are subject to the baseline scenario determined in the project description for the specified project activity and geographic area.	All new project activity instances will be installed within Zimbabwe only and the baseline scenario is the continued use of non-renewable wood fuel by the target population to meet similar thermal energy needs as provided by project cookstoves in absence of project activity. This also conforms to the applied methodology.	In accordance with the requirements of applied methodology, baseline scenario has been defined as the continued use of non-renewable woody biomass by the target population to meet similar thermal energy needs as provided by the project cookstoves. The same can be confirmed in Section 3.4 of this VCS-PD.

9.	Double Counting	The Improved Cookstove distributed under this project shall be uniquely identifiable based on the distribution records. Project will not claim carbon credits under two different mechanisms for the same monitoring period.	Each ICS installed under this grouped project activity shall have a unique, non-replicable serial number. This number along with corresponding end user details (i.e., name, geographical coordinates, address, unique serial number) shall form the unique identity of the stove distinguishing it from other stoves. No individual serial number can be repeated within the project, thus ensuring that each stove is counted only once in the proposed project. In addition, the project will be cross-checked against other projects in same host country on other relevant voluntary carbon schemes to ensure that the ICS is not included in any other project activity. Self-declaration provided by the PP.
10.	Ownership: Have evidence of project ownership, in respect of each project activity instance, held by the project	A default Beneficiary Agreement for end users including the provision that emission reductions generated by the project activity are owned by the Project Proponent will be provided for project activity instance.	Sample copy of registration form which is a record of end user's agreement on relinquishing all carbon rights in favour of project proponent.

	proponent from the respective start date of each project activity instance		
11.	Crediting period	Be eligible for crediting from the start date of the instance through to the end of the project crediting period (only). Note that where a new project activity instance starts in a previous verification period, no credit may be sought for GHG emission reductions or removals generated during a previous verification period (as set out in Section 3.4.4) and new instances are eligible for crediting from the start of the next verification period.	The start date of the instance will be the date, the stove began generating GHG emission reductions or removals. The end of the crediting period of instance will be the end date of project crediting period as mentioned in section 1.9.1

1.5 Project Proponent

Organization name	C-Quest Capital SGM ZM Stoves Private Limited
Contact person	Ken Newcombe
Title	Director
Address	38 Beach Road, #29-11, South Beach Tower, Singapore (189767).
Telephone	-
Email	cqc-operations@cquestcapital.com

1.6 Other Entities Involved in the Project

At the present, C-Quest Capital SGM ZM Stoves Private Limited is the sole entity involved in the project.

1.7 Ownership

The project ownership is with C-Quest Capital SGM ZM Stoves Private Limited.

During the registration of ICS, the participating household will sign a declaration to transfer the ownership rights of the carbon assets generated from this project to the project proponent.

This is in line with the clause 5 of section 3.6.1 of VCS project standard ver4.3.

1.8 Project Start Date

14th October 2021 (Date of commissioning of ICS batch 1)

1.9 Project Crediting Period

14 October 2021 to 13 October 2031, ten years fixed crediting period.

1.10 Project Scale and Estimated GHG Emission Reductions or Removals

Project Scale	
Project	
Large project	X

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
2021-22	1,649,312
2022-23	1,462,919
2023-24	1,281,486
2024-25	1,104,940
2025-26	933,208
2026-27	766,220
2027-28	603,905
2028-29	446,193
2029-30	293,017
2030-31	144,308
Total estimated ERs	8,685,508
Total number of crediting years	10

Average annual ERs

868,550

1.11 Description of the Project Activity

The project involves distribution of fuel-efficient improved cookstoves (ICS) to replace the baseline cookstoves in households. Expected yearly installation plan detail has been submitted to the VVB.

The ICS to be deployed under this project is TLC-CQC Rocket Stove which substantially reduces fuel consumption and emissions for conducting cooking and water heating tasks in homes. The ICS improve the efficiency of combustion and thermal transfer to the pot compared with a traditional pot support or three-stone fire because of improved design which leads to efficient combustion of wood. This substantially reduces wood fuel consumption compared with a three stone fire or traditional pot support. The project proponent has implemented several projects in Sub-Saharan Africa and hence has an understanding of the cooking cultures prevalent in the region. In order to dissuade the end users from using the baseline stoves again each household is provided with 2 stoves to meet their cooking requirements which is also corroborated with studies conducted in Zimbabwe.

Technology/Measure

TLC-CQC Rocket Stove uses a total of 15 bricks that will be made by the households using locally available clay. The average size of the brick would be 22cm x 11cm x 6.5cm. The bricks will be joined together using a mixture of 3 litres clay, 3 litres sand, 3 litres manure/cow dung and 3 litres of water. This ensures reduction in heat loss and better insulation. Metal components have been added to the design to optimize combustion and heat transfer.



TLC-CQC Rocket Stove

Stove components

Stove has a metal top that allows the pot to sit higher improving the flow of air into the combustion chamber and out through the top of the stove.

An adjustable metal pot skirt ensures more effective transfer of heat from the fire into the pot, increasing efficiency and also helping to block wind.

TLC-CQC stoves come with a metal stick support which is placed in front of and slightly into the opening of the stove and acts as a firewood feeding platform. This ensures adequate airflow while feeding the fuel into the combustion chamber resulting in complete combustion of wood.

According to independent stove efficiency tests performed by Aprovecho Research Centre on the TLC Rocket Stove, the WBT results yielded an average thermal efficiency of 34.5%.

Parameter	Technical Specifications
Stove Size	Depth: 34.5 cm Width: 34.5 cm Height: 28 cm
Efficiency	34.5%
Average Life Span	10 years

Data collection of ICS end-user

Project proponent must gather the necessary information to identify households using its ICS during the course of the project. To facilitate this process, each ICS will be assigned a unique serial number. This number will be recorded during the registration process together with the following information (as appropriate and as available):

- Name of ICS user or head of the household
- Address / GPS of ICS household
- Phone number of ICS user or household, where available.
- Stove model
- Date of distribution/installation
- ICS serial number
- Retailer/distributor information

The information collected will be stored in the electronic database which will serve as project database for project monitoring and sampling purposes.

Unique identification of End users

A unique ID comprising of a combination of customer name, geographical location as well as a serial number will be used to identify the ICS end users of this project activity. This identification mechanism will help the PP to differentiate VCU's specific to each project activity that will be undertaken in the project boundary. The PP will ensure that double accounting is not done for the projects and the ICS registered to the current project activity are used to claim VCU's.

Ex-ante v/s Actual emission reductions

The ex-ante emission reductions have been calculated as demonstrated in section 4.4. However, the actual emissions reductions during the verification will depend on the values of $B_{y=1, \text{new}, i, j, \text{survey}}$ and $N_{y, i, j}$ obtained during the monitoring surveys. Also, the projected stove installation might get extended over a year or maybe even two years depending on the rate of construction of the stoves on field and therefore for first few years the emission reduction could be lower than the ex-ante calculated values. The uncertainty in number of stoves installed and operational during the monitoring period will primarily result in the differences of the ex-ante and actual emission reductions achieved during the crediting period.

1.12 Project Location

The project location will be the geographical boundary of Republic of Zimbabwe with coordinates- 19° 0'55.6"S latitude and 29° 09'17.5"E longitude¹.



Zimbabwe map²

¹ <https://www.geodatos.net/en/coordinates/zimbabwe>

² <https://www.worldatlas.com/maps/zimbabwe>



Map of project area (See KML file attached)

Republic of Zimbabwe is divided into 10 provinces. To facilitate the management, implementation, monitoring and sampling stages of the project, the project proponent divides the project boundary into 4 project areas according to the provinces.

No.	Project Area	Provinces
1	Northern Area	Mashonaland West, Mashonaland Central
2	Central South Area	Midlands, Masvingo
3	Eastern Area	Manicaland, Mashonaland East, Harare
4	Western Area	Matabeleland North, Matabeleland South, Bulawayo

1.13 Conditions Prior to Project Initiation

The conditions prior to project initiation is the continued use of non-renewable wood fuel (firewood) by the target population to meet similar thermal energy needs as provided by project cookstoves in absence of project activity. The pre-project devices are inefficient three stones fires or conventional systems lacking improved combustion air supply mechanism and flue gas ventilation system i.e., traditional stoves.

1.14 Compliance with Laws, Statutes and Other Regulatory Frameworks

There are no laws and regulations governing the use of improved cookstoves in Zimbabwe households. The project is a voluntary effort by the project proponent.

A review is made on Zimbabwe environmental laws and regulations as below:

- a) Environmental Management Act, 2002³
- b) EIA and Ecosystems Protection Regulations SI 7, 2007⁴
- c) Atmospheric Pollution Control Regulations SI 72, 2009⁵

There is no specific concern made on improved cookstoves project from the above laws and regulations.

1.15 Participation under Other GHG Programs

Projects Registered (or seeking registration) under Other GHG Program(s)

The project has not been registered, nor is it seeking registration under any other GHG program.

1.15.1

Projects Rejected by Other GHG Programs

1.15.2

The project has not been rejected by any other GHG program.

1.16 Other Forms of Credit

1.16.1

Emissions Trading Programs and Other Binding Limits

The project is not included in an emissions trading program or any other mechanism that includes GHG allowance trading.

1.16.2

Other Forms of Environmental Credit

The project has not sought or received another form of GHG-related environmental credit.

1.17 Sustainable Development Contributions

The project contributes to sustainable development in a number of ways:

a) Environmental Sustainability

- The project will help significantly reduce greenhouse gas emissions over its lifetime.
- The project will help reduce the use of non-renewable biomass from forests, thus assist in conserving existing forest stock and the protection of natural forest eco-systems and wildlife habitats.

b) Social Sustainability

³ <http://extwprlegs1.fao.org/docs/pdf/zim47834.pdf>

⁴ <http://extwprlegs1.fao.org/docs/pdf/zim181644.pdf>

⁵ <http://extwprlegs1.fao.org/docs/pdf/zim181839.pdf>

- Considerably less time need to be spent collecting wood fuel for the family home thereby reducing the work burden on rural families and presenting alternative opportunities for economic development.
- The number of indoor pollutants from the burning of biomass in the family home will be reduced. Less carbon dioxide, carbon monoxide and particulates will be emitted due to the decrease in total biomass burned and an increase in the temperature of combustion.
- The stove provides a safer method for combusting biomass for cooking, helping to reduce burn injuries, especially for children, in the family home.

c) Economic Sustainability

- The project will help develop a section of the local economy, in the distribution, local assembly, maintenance and monitoring activities.
- Household expenditures on cooking fuel will be reduced through the use of the ICS.
- Saved household labour can be diverted to more productive economic activities.
- The project will create local employment opportunities in operational and management roles, as well as future assembly and/or manufacturing initiatives.

1.18 Additional Information Relevant to the Project

Leakage Management

Not applicable as the project adopts a net gross adjustment factor of 95% to account for leakage.

Commercially Sensitive Information

No commercially sensitive information has been excluded from the public version of the project description.

Further Information

Not applicable.

2 SAFEGUARDS

2.1 No Net Harm

No potential negative environmental or socio-economic impacts have been identified for the project.

2.2 Local Stakeholder Consultation

Feedback was requested from local stakeholders for the “Installation of high efficiency wood burning cookstoves in Zimbabwe” between October 26th, 2020 and November 25th, 2020.⁶ Necessary precautions were taken place in light of the COVID-19 pandemic, with feedback having been conducted electronically when possible, minimizing large groups and socially distancing during in person meetings.

Stakeholders were invited to provide feedback via multiple methods including, an announcement posted on C-Quest Capital’s website on October 26th, 2020 with an electronic feedback form, Project Description Presentation, and Non-Technical Summary. Furthermore, an English advert ran in The Herald, a major national newspaper, on November 12th, 2020 [see Appendix 1]; and e-mail invitations were sent from C-Quest Capital on November 4th, 2020 to 48 people from organizations around the country including government, NGOs, stove manufacturers, project developers, academia and private and public-sector entities involved with cookstoves and/or sustainable energy. The email included a link to the CQC website announcement and feedback form which resulted in electronic commentary from two additional stakeholders (See Appendix 1)

Feedback was received from fourteen individuals through meetings conducted with national stakeholders and one meeting with beneficiaries in the Dema District in Mashonaland. Beneficiaries reported that they would like the project to be implemented in their community as the issue of deforestation has become more of a problem. On average, they travel at least five kilometres to gather firewood, and this scarcity of firewood in their area even limits them on what they can cook and how often they can cook. A stove innovation that can address this concern of limited resources and that will conserve fuel is very powerful and a program carried out at mass scale would positively impact the country of Zimbabwe as a whole. Attainable goals to complement a stove intervention in this area are to mobilize and educate the community in forest preservation and establish renewable fuel woodlots so there is enough cooking biomass nearby for all to use and the community to sustainably manage.

Feedback from the national stakeholders supported those claims in that firewood has become increasingly hard to find in rural Zimbabwean communities and that there is also limited knowledge on fuel-efficient cooking practices and alternatives. The Evangelical Church reported they were ready to help facilitate the distribution of rocket stoves and organize a Training of Trainers (ToT) at their head office and specific planning procedures were put in place to carry out a training. Overall, national stakeholders widely recognized the benefits of the stove project including, curbing deforestation, protection from gullying and erosion, reducing walking distances

⁶ At the project planning stage, only one Verra cookstove project was planned for Zimbabwe. Due to different investors, it was implemented as two separate projects which are Project 2341 Installation of high efficiency wood burning cookstoves in Zimbabwe and Installation of high efficiency wood burning cookstoves in Zimbabwe - Project 2. The projects are identical and implemented with same technology, same local partner. Given that the both projects are identical, thus one local stakeholder meeting was conducted to cover the projects. The outcome from local stakeholder meeting will be applied for the both projects.

and promoting health and safety of women and children. Recommendations were to pursue manufacturing opportunities in Zimbabwe in the future and partner with UNICEF/Zimbabwe and the Ministry of Energy and Power Development for duty import exemption.

As the travel restrictions due to COVID-19 started to ease in 2021, CQC decided to conduct follow-up LSC for better information dissemination in the local communities. Three local stakeholder consultation meetings were conducted in Zimbabwe in the last quarter of 2021. The first local stakeholder consultation meeting was held on 20 November 2021 in Dema, Seke district. The following meeting was held in Mhangura, Makonde district on 22 November 2021. The final meeting was convened in Madziwa, Bindura district. Community stakeholders that attended these various meetings included local leadership representatives i.e. councilors and village heads, improved cook stove beneficiaries, enumerators, health promoters and district coordinators.

The meetings which lasted approximately 2,5 hours commenced with introductions. Participants introduced themselves, followed by local leadership and lastly, the implementing partner and the CQC representative. Thereafter, the CQC country manager took the platform and stated the objectives of the meeting, which were to:

- To explain the background and purpose of the improved cook stove project in Zimbabwe
- To seek feedback from participants on project design and implementation
- To address questions from participants about the proposed project and its implementation

Next, a presentation was made which gave an overview of Cquest Capital limited, the baseline information of the study, the project stove: TLC-CQC Rocket, the project benefits (for people and their prosperity and the planet), threats to the project and CQC's identified solutions, the benefits and sustainable development, project implementation, project financing and the Carbon Standards i.e. VERRA and SDVISTA.

A plenary session was held following the presentation. This paved way for participants to ask questions, seek clarification or provide feedback or any personal experiences of using the improved cook stove. Highlighted below are some of the remarks made by participants in the various districts during the discussion section of the meeting.

In order to probe feedback from participants on project design and implementation, the facilitator asked 3 guiding questions in the meeting.

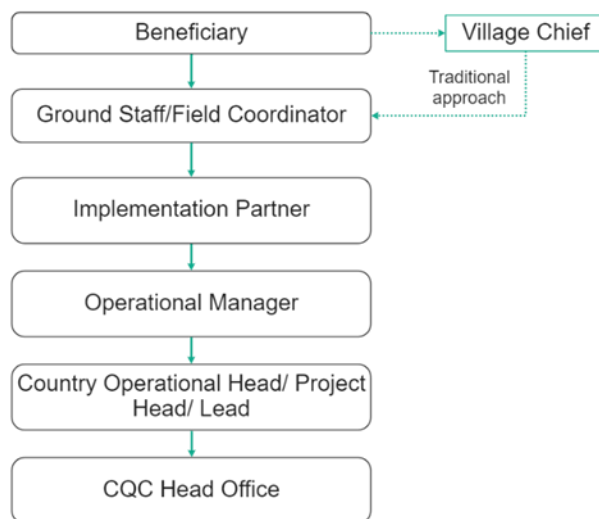
1. Can every member of the household who is eligible to cook use the tsotso⁷ stove?
☐ Most participants said that everyone in the household including older children can use the tsotso stove as it is very simple to use and often cook with it.
2. Why do some households still use open fires?

⁷Tsotso means ICS in local language.

- ☐ Some participants said that they still use the traditional stove for warmth in winter and to cook during big events such as funerals and weddings. Other participants begged to differ and said they are able to use tsotso stove for warmth together as a family in winter.
 - ☐ Other participants mentioned that tsotso stove does not meet their business needs. They reported that they bake bread and buns for commercial purposes and the tsotso stove does not have an oven in which to do so. Others said they roast peanuts also for commercial purposes and the tsotso stove is small to roast the huge quantities of peanuts required for resale. It would be too time consuming to even attempt using the tsotso stove for roasting.
 - ☐ Others revealed they brew beer in drums and cannot do so on the tsotso stove because the drums are huge.
 - ☐ Some said they simply enjoy using the three stone fire because they used to it. They said we were born using the open fire and making that switch to an efficient means of cooking requires continuous education like this platform, which has spelt out all the benefits of the tsotso stove.
3. Have women and children saved time in cooking related activities since they started using the tsotso stove?
- ☐ On the whole participants reported they now spend less time collecting firewood and experience less pressure on the heads from carrying the firewood. Some participants said that they used to go look for firewood many kilometers away from home in neighboring farms and would go as early as 7am and come back around 4pm. They mentioned that farms were far and at times they would get chased away from farms by the owners since they were “stealing” the firewood. Here and there, police would clamp down on them, but they made sure they would fight tooth and nail to bring back some firewood after a long day’s travel. These firewood experiences also exacerbated gender-based violence as their spouses would not believe that their wives had spent the whole day fetching firewood.
 - ☐ Beneficiaries relayed that their children now have time for studying because they spend less time collecting firewood.

Grievance Redressal mechanism.

PP follows a proper Feedback and Grievance Redress Policy and Procedure (Being provided to the VVB for reference), which ensures that project-affected communities and individual stakeholders’ grievances are properly prioritized and addressed. These measures are taken to enhance PP’s accountability and transparency and to support the project initiatives that can help the communities to identify adverse effects to them, or their environment which had not previously been identified and mitigated by PP.



Flow of information/complaint/grievances from stakeholder to PP

The Grievance Policy and Procedure can be accessed through a phone number of the PP/implementing partner office in Zimbabwe, contact number is also available on the brochure provided to each household, which is the most accessible manner to provide feedback. PP policy and procedure outline the process to evaluate and respond to complaints; the procedure details when a serious level complaint is received it should be communicated to PP country teams and then it would be best addressed by the implementing partner.

2.3 Environmental Impact

No negative environmental impacts have been identified from the project and environmental impact assessment (EIA) is not required for the project.

2.4 Public Comments

The project was open for public comments from 03/06/2022 to 03/07/2022. However, no comments were received during this period.

2.5 AFOLU-Specific Safeguards

This section is not applicable as the project is a non-AFOLU project.

3 APPLICATION OF METHODOLOGY

3.1 Title and Reference of Methodology

VMR0006: Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.1⁸

TOOL 30: Calculation of the fraction of non-renewable biomass, version 3.0⁹

3.2 Applicability of Methodology

Applicability criterion	How the project complies
Project activities must introduce efficiency improvements in thermal applications of non-renewable biomass in the following premises: households, community-based kitchens, institutions (e.g. schools) or small and medium-sized enterprises (SMEs).	The proposed project involves deployment of improved cookstoves which leads to improvement in thermal application of firewood (non-renewable biomass) in household premises.
The project stove shall have specified high-power thermal efficiency of at least 25% per the manufacturer's specifications and shall exclusively use woody biomass and can be single pot or multi-pot;	TLC-CQC Rocket stoves planned to be installed under this project are single pot wood cookstoves that have an efficiency of 34.5% as per the manufacturer's specifications.
Both 'Projects' and 'Large Projects' can use this methodology.	The proposed project is expected to generate 868,550 tonnes CO2 per year which is greater than 300,000 tonnes CO2 per year and thus qualifies as a "large project" as per section 3.9.1 of the VCS Standard version 4.3
Non-renewable biomass has been used in the project region since 31 December 1989, using survey methods or referring to published literature, official reports or statistics;	Non-renewable biomass has been used since 31 December 1989 in Zimbabwe as demonstrated below.
For the specific case of biomass residues processed as a fuel (e.g. briquettes, wood chips), it shall be demonstrated that: (a) It is produced using exclusively renewable biomass (more than one type of biomass may be used). (b) The consumption of the fuel should be monitored during the crediting period and (c) Energy use for renewable biomass processing (e.g. shredding and	Not applicable. The ICS is introduced as energy efficiency measure to replace baseline stoves and reduce the use of non-renewable biomass (fuelwood) for combustion.

⁸ <https://verra.org/wp-content/uploads/2021/07/VMR0006-Methodology-for-Installation-of-High-Efficiency-Firewood-Cookstoves-v1.1.pdf>

⁹ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-30-v3.0.pdf>

compacting in the case of briquetting) may be considered as equivalent to the upstream emissions associated with the processing of the displaced fossil fuel and hence disregarded.	
The project design shall explain the proposed method for distribution of project devices including the method to avoid double counting of emission reductions such as unique identifications of product and end-user locations (e.g., programme logo)	Each ICS in this project will be identified by a unique combination of customer name and geographical location, as well as a serial number. The serial number will be a unique number which will allow for a clear distinction between the stoves. No individual serial number can be repeated within the project, thus ensuring that each stove is counted only once in the proposed project. In addition, the project has been cross-checked against other CDM project activity operating in the country using the UNFCCC, the Gold Standard, and other relevant voluntary carbon schemes to ensure that the ICS is not included in any other CDM project activity or voluntary project activity.
The project design shall also explain how the proposed procedures prevent double counting of emission reductions, for example to avoid that project stove manufacturers, wholesale providers or others claim credit for emission reductions from the project devices.	The stove manufacturers/wholesale providers/ end users shall sign an undertaking stating clearly that the PP or an entity authorized by it shall be the sole owner of the VCUs arising from the project.

Evidence that the non-renewable biomass has been in use since 1989

Non-renewable biomass has been in use since December 31, 1989 as evidenced by various FAO statistical data. The Global Forest Resources Assessment 2020 (FAO)¹⁰ indicates that forest areas decline yearly. Between years 1990 and 2020, Zimbabwe lost on average of 46,070 hectares of forest per year. This amounts to an average annual deforestation rate of 0.25%. Between years 2010 and 2020, the rate of forest loss is 0.25% per annum. In total, between 1990 and 2020, Zimbabwe lost 7.34% of its forest cover, or around 1,382,100 hectares.

Decline in growing stock between 1990-2020

¹⁰ <https://www.fao.org/3/cb0093en/cb0093en.pdf>

FRA categories	Area (1000 ha)			
	1990	2000	2010	2020
Forest (a)	18826.68	18365.98	17905.28	17444.58
Other wooded land (b)	7454.32	7454.32	7454.32	7454.32
Other land (c-a-b)	12404	12864.7	13325.40	13786.10
Total land area (c)	38685	38685	38685	38685

As per latest available DHS report for Zimbabwe (2015), 92.6% of the rural households were dependent on firewood as energy source for cooking. Thus, it can be concluded that major losses have been reported in forest areas from before 1989 thereby hinting that majority of fuelwood used across Zimbabwe comes from non-renewable sources.

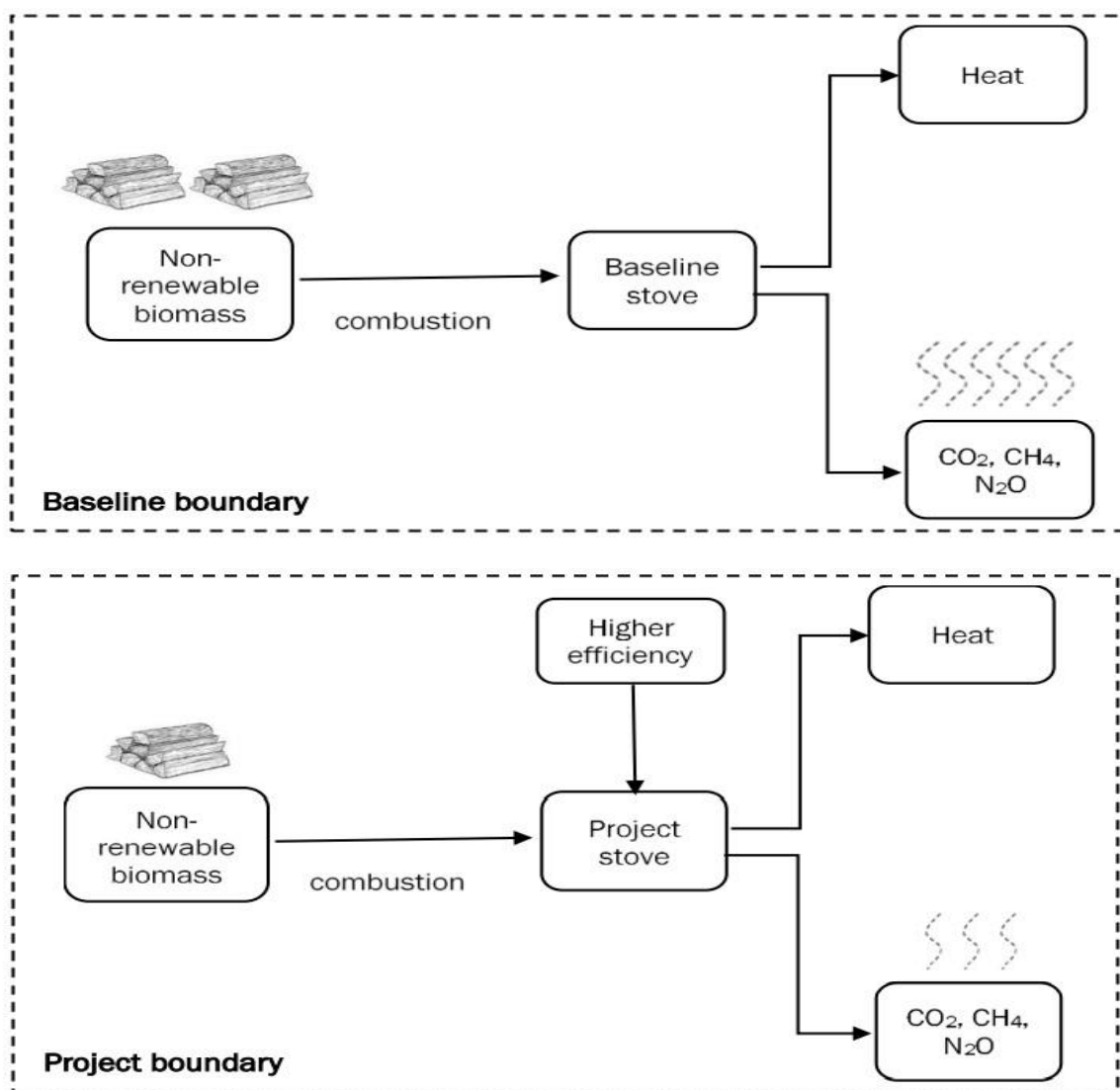
3.3 Project Boundary

As per VMR0006 ver1.1, the project boundary is determined following the procedure provided in CDM methodology AMS-IL.G. ver13.0

Component	Project Boundary
16. The project boundary is the physical, geographical site of the efficient devices that utilize biomass.	The project boundary for this project is the geographical boundary of republic of Zimbabwe. Refer section 1.12 for more details.

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

A representation of the baseline boundary and project boundary are given as below:



3.4 Baseline Scenario

The baseline scenario is the continued use of non-renewable wood fuel (firewood) by the target population to meet similar thermal energy needs as provided by project cookstoves in absence of project activity. This project activity will replace baseline stoves which are three stone fire stoves¹¹ using large quantities of non-renewable biomass with high efficiency stoves using woody biomass more economically thereby reducing emissions of greenhouse gases.

3.5 Additionality

The methodology uses activity method for the demonstration of additionality.

¹¹ During project stove registration the end user confirms to using three stone fire stoves for cooking meals post which they are provided with project stoves.

Activity Method

Step 1: Regulatory Surplus

There is no mandated government programme or policy in host country of this project ensuring the distribution of domestic fuel-efficient cookstoves. The project is not mandated by any law, statute or other regulatory framework, or for UNFCCC non-Annex I countries, any systematically enforced law, statute or other regulatory framework.

Households may only participate voluntarily in this project. It is hereby confirmed that the proposed project is a voluntary coordinated action by CQC.

Step 2: Positive List

As per Section 3.2, the project meets the applicability conditions of the methodology which represent the positive list.

The project installs the ICS at zero cost to the household and has no other source of revenue other than the sale of GHG credits.

The project is not implemented as part of government schemes or supported by multilateral funds.

Conclusion: As the project fulfills the conditions above, it is deemed additional.

3.6 Methodology Deviations

The project did not apply any methodology deviations.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

The methodology does not account for baseline emissions separately, but instead quantifies net emission reductions achieved by the project. Please refer to Section 4.4.

4.2 Project Emissions

The methodology does not account for project emissions separately, but instead quantifies net emission reductions achieved by the project. Please refer to Section 4.4.

4.3 Leakage

Leakage shall be considered as default 0.95 in accordance with methodology.

4.4 Net GHG Emission Reductions and Removals

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

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

Where:

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

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

- $B_{y,savings,i,j}$ = 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})¹²
- $NCV_{wood\ fuel}$ = Net calorific value of the non-renewable woody biomass that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/tonne)¹³
- EF_{wf,CO_2} = CO₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 tCO₂/TJ)¹⁴

¹² Third party report by C4Ecosolutions (Pty) Ltd.

¹³ 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 1 Introduction

¹⁴ 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion

$EF_{wf,non\ CO2}$	=	Non-CO ₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 26.23 tCO ₂ /TJ) ¹⁵
$N_{y,i,j}$	=	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 4 of the methodology:

$$B_{y,savings,i,j} = B_{y=1,new,i,survey} \times \left(\frac{\eta_{new,i,y}}{\eta_{old}} - 1 \right) \quad \text{Equation (4)}$$

η_{old}	=	Efficiency of baseline cookstove
$\eta_{new,i,y}$	=	Efficiency of the improved cookstove type i and batch j determined through water boiling test (WBT). Alternatively, efficiency may be determined using Equation 5.
$B_{y=1,new,i,j,survey}$	=	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.

$$\eta_{new,i,y} = \eta_p \times (DF_n)^{y-1} \times 0.94 \quad \text{Equation (5)}$$

Where,

η_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.

For ex-ante calculation purpose, the assumption below is applied.

- 1) The project will install up to 375,000 ICS.

¹⁵ 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion

- 2) The life span of ICS is 10 years. For conservative estimate of ER, the annual stove loss rate is estimated at 10%.
- 3) $B_{y=1,new,i,j,survey}$ is assumed as 1.09 tonnes / device / year¹⁶ (This is only an assumed value used for ex-ante calculation, the ex-post calculation of ERs will be done based on survey results of VCS 2890 conducted separately as detailed in section “5.3 Monitoring Plan” of the PD).

Determination of number of ICS operating during year y

$$N_{y,i,j} = 375,000 \times [1 - (y-1) \times 10\%]$$

Example of calculation:

If $y = 2$,

$$N_{y,i,j} = 375,000 \times [1 - (2-1) \times 10\%]$$

$$= 375,000 \times 90\%$$

$$= 337,500$$

Hence, the number of ICS operating during year y is as below:

Year (y)	$N_{y,i,j}$
1	375,000
2	337,500
3	300,000
4	262,500
5	225,000
6	187,500
7	150,000
8	112,500
9	75,000
10	37,500

¹⁶ Value taken from VCS 2341 MP1 Survey results because the project is similar in characteristics like stove model, target population, project boundary, type of fuel used for cooking etc. with project VCS 2890

Determination of efficiency of ICS during year y

$$\eta_{new,i,y} = \eta_p \times (DF_n)^{y-1} \times 0.94$$

Where

$$\eta_p = 34.5\%$$

$$DF_n = 0.99$$

Example of calculation:

If y= 2

$$\eta_{new,i,y} = 34.5\% \times (0.99)^{2-1} \times 0.94$$

$$= 32.11\%$$

Hence the efficiency of ICS during year y is as below:

Year (y)	$\eta_{new,i,y}$
1	32.43%
2	32.11%
3	31.78%
4	31.47%
5	31.15%
6	30.84%
7	30.53%
8	30.23%
9	29.92%
10	29.63%

Determination of quantity of woody biomass that is saved in tonnes per ICS during year y

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

Example of calculation:

If y= 2,

$$B_{y,savings,i,j} = 1.09 \times [(0.3211/0.1) - 1]$$

= 2.4044 tonnes

Year (y)	$B_{y=1,new,i,survey}$	$\eta_{new,i,y}$	η_{old}	$B_{y,savings,i,j}$
1	1.09	32.43%	0.1	2.4397
2	1.09	32.11%	0.1	2.4044
3	1.09	31.78%	0.1	2.3695
4	1.09	31.47%	0.1	2.3349
5	1.09	31.15%	0.1	2.3007
6	1.09	30.84%	0.1	2.2668
7	1.09	30.53%	0.1	2.2333
8	1.09	30.23%	0.1	2.2001
9	1.09	29.92%	0.1	2.1672
10	1.09	29.63%	0.1	2.1347

Fraction of non-renewable biomass (f_{NRB}) calculation for Zimbabwe:

Parameter	Value	Source
Total Woody biomass consumption (t/yr) (H)	15,469,675	UN Data ¹⁷ , World bank data ¹⁸ , FAO ¹⁹ (in accordance with section 3.1 para 14 of the TOOL30, v03.0).
Renewable biomass (t/yr) (RB)	1,929,668	Global Forest Resource Assessment Report ²⁰ 2020 Zimbabwe, 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories,

¹⁷ <https://data.un.org/Data.aspx?q=charcoal&d=EDATA&f=cmID%3aFW>

¹⁸ https://data.worldbank.org/indicator/SP.POP.TOTL?locations=ZW&most_recent_year_desc=false

¹⁹ <https://www.fao.org/faostat/en/#data/FO>

²⁰ <https://www.fao.org/3/cb0093en/cb0093en.pdf>

		Local study (in accordance with section 3.2 para 19 of the TOOL30, v3.0)
Non-renewable biomass (t/yr)	13,540,007	Calculated (Equation 2 of CDM tool 30, v03.0)
Fraction of non-renewable biomass	0.88	Calculated (Equation 1 of CDM Tool 30, v03.0)

The total woody biomass consumption for Zimbabwe is conservatively estimated at 15,469,675 t/yr. The resulting non-renewable biomass (NRB) value was compared with the top-down product of average above-ground biomass (94.98 t/ha) and the average annual deforestation rate (46,070 ha/year). NRB, as calculated in this report according to the latest CDM Tool 30, is 13,540,007 t/year, which is significantly greater than the cross-check results based on deforestation (4,375,729 t/year). It is expected that the cross-check estimate of biomass loss from deforestation would grossly underestimate the actual extent of non-renewable biomass consumption as it only considers the average biomass stocks from areas that are completely deforested. Unsustainable wood harvesting which causes forest degradation and significant reductions in biomass stocks, but not complete deforestation, are not considered in the cross-check. The f_{NRB} calculation based on CDM Tool 30 is considered applicable for this study given that the domestic per capita consumption rates were derived from reported rural and urban consumption estimates, and that non-domestic consumption (7,967,153 t/yr) was conservatively excluded.

Third party C4Ecosolutions has used latest "Official statistics or reports or peer-reviewed literature" to derive the f_{NRB} value for Zimbabwe (for detailed calculation refer the f_{NRB} report and analysis sheet).

Determination of emission reductions by ICS of batch 1 during year y

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

Where

$$NCV_{wood\ fuel} = 0.0156 \text{ TJ/tonne}$$

$$f_{NRB,y} = 0.88$$

$$EF_{wf,CO_2} + EF_{wf,non\ CO_2} = 112 + 26.23 = 138.23 \text{ tCO}_2/\text{TJ}$$

Example of calculation:

If y=2,

$$ER_{y,i,j} = 2.4044 \times 0.0156 \times 0.88 \times 138.23 \times 337,500 \times 0.95$$

$$=1,462,919 \text{ tCO}_2$$

Year	$B_{y,savings,i,j}$	$NCV_{wood\ fuel}$	$f_{NRB,y}$	$EF_{wf,CO2} + EF_{wf,non\ CO2}$	$N_{y,i,j}$	$ER_{y,i,j}$
1	2.4397	0.0156	0.88	138.23	375,000	1,649,312
2	2.4044	0.0156	0.88	138.23	337,500	1,462,919
3	2.3695	0.0156	0.88	138.23	300,000	1,281,486
4	2.3349	0.0156	0.88	138.23	262,500	1,104,940
5	2.3007	0.0156	0.88	138.23	225,000	933,208
6	2.2668	0.0156	0.88	138.23	187,500	766,220
7	2.2333	0.0156	0.88	138.23	150,000	603,905
8	2.2001	0.0156	0.88	138.23	112,500	446,193
9	2.1672	0.0156	0.88	138.23	75,000	293,017
10	2.1347	0.0156	0.88	138.23	37,500	144,308

The below table mentions the estimated emission reductions generated during the project crediting period. The estimated baseline emissions; project emissions & leakage emissions have been reflected as Not Applicable (N/A) because of the following reasons:

1. The methodology does not quantify baseline & project emissions separately. It directly quantifies net emission reductions achieved by the project as described in sections 4.1 & 4.2 of this document.
2. A default leakage adjustment factor of 0.95 has been considered, in accordance with methodology, in the calculation of net emission reductions as mentioned in section 4.3 of this document

Year	Estimated baseline emissions or removals (tCO _{2e})	Estimated project emissions or removals (tCO _{2e})	Estimated leakage emissions (tCO _{2e})	Estimated net GHG emission reductions or removals (tCO _{2e})
Year 1	N/A	N/A	N/A	1,649,312
Year 2	N/A	N/A	N/A	1,462,919
Year 3	N/A	N/A	N/A	1,281,486
Year 4	N/A	N/A	N/A	1,104,940
Year 5	N/A	N/A	N/A	933,208

Year 6	N/A	N/A	N/A	766,220
Year 7	N/A	N/A	N/A	603,905
Year 8	N/A	N/A	N/A	446,193
Year 9	N/A	N/A	N/A	293,017
Year 10	N/A	N/A	N/A	144,308
Total	N/A	N/A	N/A	8,685,508

5 MONITORING

5.1 Data and Parameters Available at Validation

Data / Parameter	$f_{NRB,y}$
Data unit	Fraction
Description	Fraction of woody biomass saved by the project activity during year y that can be established as non-renewable biomass.
Source of data	Official statistics or reports or peer-reviewed literature (IPCC2019 refinement, UN Data & FAO reports)
Value applied	0.88
Justification of choice of data or description of measurement methods and procedures applied	This parameter shall be determined ex-ante. C4 EcoSolutions (Pty) Ltd was appointed as third party to study and derive the f_{NRB} value for Zimbabwe. The value has been calculated in accordance with Tool30 ver3.0; using latest available versions of Food and Agriculture Organization (FAO) report, UN Data and other publicly available data that have been published by reliable sources.
Purpose of Data	Calculation of emission reductions
Comments	The report of f_{NRB} will be made available to VVB during the validation.

Data / Parameter	NCV_{wood fuel}
Data unit	TJ/tonne
Description	Net calorific value of the non-renewable woody biomass that is substituted or reduced
Source of data	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 1 Introduction
Value applied	0.0156
Justification of choice of data or description of measurement methods and procedures applied	IPCC default value
Purpose of Data	Calculation of emission reductions
Comments	No comments

Data / Parameter	EF_{wf,CO2}
Data unit	tCO ₂ /TJ
Description	CO ₂ emission factor for the use of wood fuel in baseline scenario
Source of data	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion
Value applied	112
Justification of choice of data or description of measurement methods and procedures applied	IPCC default value
Purpose of Data	Calculation of emission reductions
Comments	No comments

Data / Parameter	EF_{wf,non CO2}
Data unit	tCO ₂ /TJ

Description	Non-CO ₂ emission factor for the use of wood fuel in baseline scenario
Source of data	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion
Value applied	26.23
Justification of choice of data or description of measurement methods and procedures applied	IPCC default value
Purpose of Data	Calculation of emission reductions
Comments	No comments

Data / Parameter	η_{old}
Data unit	Fraction
Description	Efficiency of baseline cookstove
Source of data	Methodological default value
Value applied	0.1
Justification of choice of data or description of measurement methods and procedures applied	A default value of 0.1 is used because baseline device is a three-stone fire using firewood (not charcoal), or a conventional device with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney
Purpose of Data	Calculation of emission reductions
Comments	The project intends to target only those households that are using three stone fire/traditional stove and firewood as fuel. All registration certificates to record the consent of end user stating voluntary adoption of ICS thereby replacing the traditional pot.

Data / Parameter	η_P
Data unit	Fraction
Description	Efficiency of project stove at the start of project activity.
Source of data	Manufacturer's specification/ third party efficiency test report.

Value applied	0.345
Justification of choice of data or description of measurement methods and procedures applied	This parameter shall be determined ex-ante
Purpose of Data	Calculation of $\eta_{\text{new},i,y}$
Comments	No comments

5.2 Data and Parameters Monitored

Data / Parameter	$N_{y,i,j}$
Data unit	Number
Description	Number of project devices of type i and batch j operating during year y
Source of data	Monitoring survey
Description of measurement methods and procedures to be applied	Measured directly or based on a representative sample. Sampling standard shall be used for determining the sample size to achieve 90/10 confidence precision according to the latest version of Standard for sampling and surveys for CDM project activities and programme of activities.
Frequency of monitoring/recording	At least once every two years
Value applied	For ex-ante emission reduction calculation, it is assumed that the project will distribute up to 375,000 ICS.
Monitoring equipment	Monitoring survey
QA/QC procedures to be applied	Sampling standard “sampling and surveys for CDM project activities and programme of activities” version 09.0 will be used for determining the sample size to achieve 90/10 confidence precision
Purpose of data	Calculation of emission reductions
Calculation method	Proportion of operational stoves obtained from the survey is multiplied by the total commissioned stoves to arrive at this value
Comments	No comments

Data / Parameter	$\eta_{new,i,y}$																						
Data unit	Fraction																						
Description	Efficiency of the improved cookstove type i and batch j determined through water boiling test (WBT). Alternatively, efficiency may be determined using equation 5.																						
Source of data	Calculation																						
Description of measurement methods and procedures to be applied	To adopt Option V given in the methodology: “Efficiency of the improved cookstoves to be estimated using equation 5 above where loss in efficiency per year is calculated, and therefore this parameter does not need to be monitored”																						
Frequency of monitoring/recording	Annually																						
Value applied	For ex-ante calculation, the value below is applied. <table border="1"> <thead> <tr> <th>Year (y)</th><th>$\eta_{new,i,y}$</th></tr> </thead> <tbody> <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> </tbody> </table>	Year (y)	$\eta_{new,i,y}$	1	32.43%	2	32.11%	3	31.78%	4	31.47%	5	31.15%	6	30.84%	7	30.53%	8	30.23%	9	29.92%	10	29.63%
Year (y)	$\eta_{new,i,y}$																						
1	32.43%																						
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6	30.84%																						
7	30.53%																						
8	30.23%																						
9	29.92%																						
10	29.63%																						
Monitoring equipment	Calculated value																						
QA/QC procedures to be applied	This parameter will be calculated using equation 5 of the applied methodology.																						
Purpose of data	Calculation of emission reductions																						
Calculation method	Calculation to be performed using equation below: $\eta_{new,i,y} = \eta_p \times (DF_n)^{y-1} \times 0.94$																						

Comments	No comments
Data / Parameter	$B_{y=1,new,i,j,survey}$
Data unit	Tonnes
Description	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
Source of data	Monitoring survey
Description of measurement methods and procedures to be applied	Minimum sample size of each type i and batch j should be in line with the latest version of Standard for sampling and surveys for CDM project activities and programme of activities or guidelines provided in methodology Section 8.4 option (b). This value will be determined within the first year of the introduction of the devices through sample surveys. Under this project two TLC-CQC Rocket Stoves have been installed in each household, which are classified as Project stove 1 and project stove 2. At the time of survey, field staff will ask the user to make a pile for the total firewood²¹ required for cooking in a day for all the stoves available in his/her house and weight the same. Further user will be asked to extract and make the piles for the wood required for the project stove 1 and project stove 2 separately from that pile and weigh both the piles. Remaining portion, if any after the segregation of 2 piles for both project stove will be accounted as baseline stove wood fuel usage. Same has been recorded in the survey forms and in the spreadsheet. Therefore, firewood consumed for each project stove and baseline stove can be distinguished clearly. Proper training will be provided to the monitoring personnel before conducting the onsite monitoring survey.
Frequency of monitoring/recording	Determined in the first year of project implementation
Value applied	For ex-ante calculation, the value is based on VCS 2341 MP1 survey results as 2.98kg/device/day or equal to 1.09 tonnes/device/year.
Monitoring equipment	Monitoring survey

²¹ Firewood available at the end user's premises.

QA/QC procedures to be applied	Calibration of weighing scales to be used for measuring the fuel wood will be done before starting the survey on site.
Purpose of data	Calculation of emission reductions
Calculation method	This is monitored value
Comments	No comments

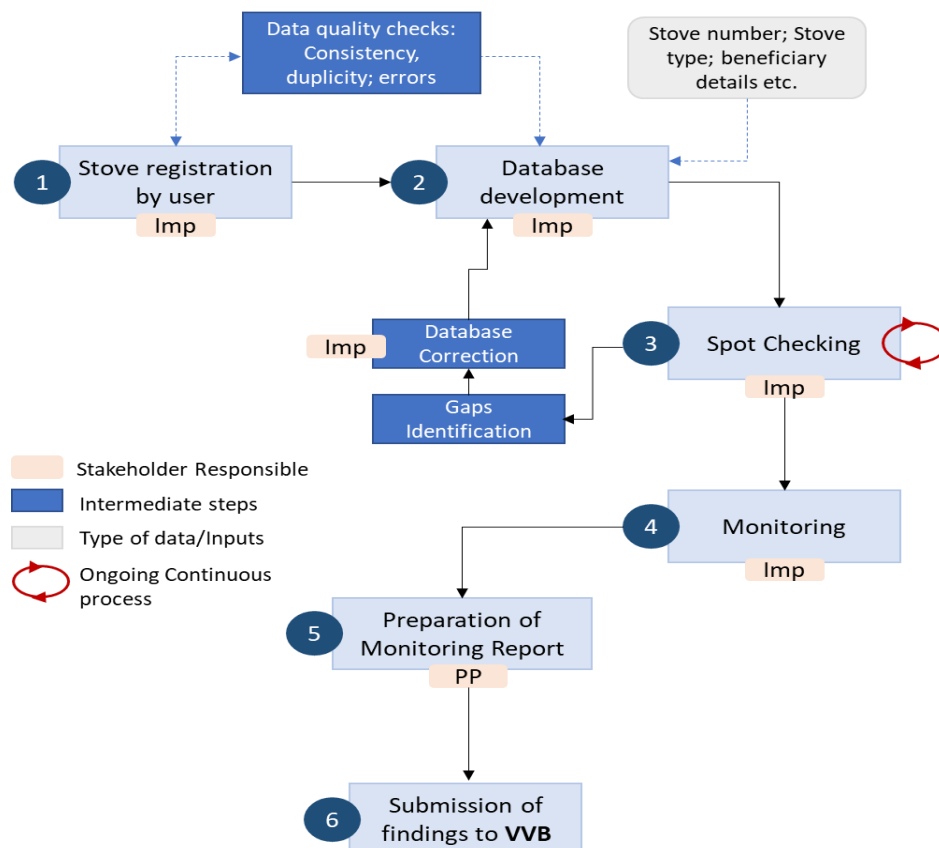
Data / Parameter	Life Span
Data unit	Number of years
Description	The operating lifetime of the project device. The life span should be reported if the methodology equation 5 is adopted to determine the project stove efficiency
Source of data	Manufacturer's specification
Description of measurement methods and procedures to be applied	TLC cookstoves will be manufactured to match the fixed design specification. This will be achieved using brick molds of specified dimensions to make bricks to be used for stove construction locally. This will ensure that each stove that is built at individual end user household measures exactly same as the dimensions specified by the manufacturer. Post construction, in person training will be provided to end users on use, care, and upkeep of these stoves. PP will conduct periodic audits and surveillance of the stoves that will be distributed under the project activity to ensure their proper functioning throughout the project lifetime. This along with spot audits and after installation maintenance services, will ensure that the project stoves continue to work at efficiencies as specified by the manufacturer.
Frequency of monitoring/recording	Once at the time of project stove installation
Value applied	10
Monitoring equipment	No equipment is required to monitor this parameter
QA/QC procedures to be applied	This parameter will be referred from the Manufacturer's specification
Purpose of data	Calculation of emission reductions
Calculation method	No calculation used for this parameter
Comments	No comments

5.3 Monitoring Plan

The Monitoring Plan applied in this project involves several key elements that ensure that the PP and/or project Implementer have high-quality, unbiased, and reliable information regarding the performance of the project in terms of implementation and outcomes, and for the purposes of calculating Verified Carbon Units (VCUs) following VMR 0006 version 1.1 on the basis of the amount of non-renewable biomass saved by the ICS in the project activity. The key elements are the following:

- Data collection procedures
- Distribution and Monitoring Database
- Spot Checking of ICS (ongoing)
- Sample Plan for the Monitoring Survey
- Data Quality, Consistency and Duplication Checks
- Monitoring Reporting

The below flow-chart illustrates the roles and responsibilities of the parties during the implementation of the monitoring plan for the project. In the below flowchart, the project implementer is abbreviated to “Imp” and can be the PP or another party authorized by the PP.



Below is the description of the above steps on the flow-chart.

1. **Imp: User registers stove:** Project implementer will collect/receive the necessary information requested in the Registration process from the user. Means of collecting this information may be through a physical Registration Card filled by project Imp staff, retailers, end-users, or partner organization's staff, or through the use of ICTs or SMS. Project Implementers' staff shall double check the accuracy of information provided, and request for field staff additional clarifications if needed.
2. **Imp: Data logged into database:** Project implementer trained staff will input the data in the database either manually (if data collected from physical Registration Card) or this will be automatically input if data was collected using ICTs or SMS. Project implementer staff shall double check the information included on the database and check for duplications. Any duplicate information shall be investigated, and errors corrected or excluded from the database if it is a true duplicate entry.
3. **Imp: Spot- checking (ongoing):** Project implementer field staff will randomly select units included in the database and visit or contact the stove users to cross-check the information on the database with the factual evidence in the field. Any inconsistencies found (e.g., change in the address of a user) will be updated on the database, and in the case, ICS are found to be no longer in use, they will be clearly marked as such and excluded from emission reductions calculations.
4. **Imp: Monitoring:** Project implementer will follow the requirements as per PD to collect the necessary information for a monitoring report.
5. **PP: Preparation of monitoring report:** the project implementers or the PP will prepare the final monitoring report to be provided to the VVB for verification of emission reductions. A copy of the monitoring report will remain with the PP.

The PP will coordinate and manage each project Implementer and assist them in implementing each element of the monitoring plan. The monitoring plan shall be elaborated in accordance with the Sampling Plan below. Also, regular audits conducted throughout the project lifetime ensures proper functioning of stoves and determination of the lifespan of the same.

Sampling Plan

As per the Guideline for Sampling and Surveys for CDM Project Activities and Programme of Activities, version 04.0, the sampling plan is the following:

(a) Sampling design

Due to the large number of ICS envisioned to be distributed under the project, it is not economically feasible to monitor each individual ICS unit distributed. Therefore, representative sampling shall be undertaken for each batch of ICS. The sampling plan to be designed in line with the requirements of the Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities, version 09.0.

Samples will be drawn from ICS recorded in the project database administered by the project proponent. A detailed explanation of this database is found in Section 1.11 of project description.

Objectives and Reliability Requirements

The objective is to obtain an unbiased and reliable estimate of the proportion or mean value of the following key variables over the course of the crediting period and with 90/10 confidence/precision (as per applied methodology VMRO006; version 1.1).

Monitored Parameters:

The project involves introduction of improved cook stoves as energy efficiency measure:

No.	Monitoring parameters	Sampling parameters	Parameter type	Monitoring frequency
1	$N_{y,i,j}$ Number of project devices of type i and batch j operating during year y	Proportion of ICS still in operation	Proportion	Annual/Biennially
2	$B_{y=1,new,i,j,survey}$ Quantity of woody biomass used by project devices in tonnes per device of type i . and batch j	Daily consumption of woody biomass per ICS	Mean value	Determined in the first year of project implementation

Target Population

The target population are all households in the project database which are using fuelwood in ICS distributed under the project for cooking.

Sampling Frame

It is expected that the geographical locations do not have influence on the parameters of interest that is $N_{y,i,j}$ & $B_{y=1,new,i,j,survey}$. Therefore, these parameters can be assumed to be highly homogeneous regardless of how the end user group and distribution/installation location is defined since the end users shall always be households and geographical location is restricted to the project boundary. The Sampling Frame for individual parameters have been defined in the following paragraphs

The sample frame refers to all the information sources on the Database. The SMS/ICT system is the primary mechanism for data collection for newly distributed ICS and the Monitoring Survey (which includes a household questionnaire and visual inspection of ICSs) that will be used

throughout the lifetime of the project. The SMS/ICT data is used to populate the stoves Database and the Monitoring Survey follows the “Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities”; version 09.

All the TLC rocket stoves distributed under this project shall be grouped together to create a Primary Sampling Unit which is homogenous. The procedure to determine the sample of households will ensure that they adequately represent the broader project population, minimizing sampling error. Using, a 90 per cent confidence level, and a 10 per cent margin of error, a random sample will be selected from the target population.

1) Sampling frame for proportion of ICS still in operation ($N_{y,j}$):

The first step is to identify the Primary Sampling Units.

Factors such as model of the ICS do not effect parameter $N_{y,j}$. Therefore Primary sampling unit in case of parameters $N_{y,j}$ is independent of model of stove.

2) Quantity of woody biomass used by project devices in tonnes per device ($B_{y=1,new,i,survey}$)

The Parameter $B_{y=1,new,i,survey}$ shall vary in accordance with its model. Hence for this parameter, the Primary Sampling Unit shall be defined as the group of ICSs of the same model. If two different ICS models being implemented in the same project – this will form two Primary Sampling Units.

Sampling Method

The sampling method for the monitored parameters $N_{y,i,j}$, and $B_{y=1,new,i,survey}$ is Simple Random Sampling and samples will be randomly selected from the primary sampling units as illustrated above. To ensure a random selection of ICS, random number generators shall be applied. Each ICS in the target population is uniquely identifiable by its unique ID number. Each ICS can thus be allocated a Sample Selection Number in each monitoring period, starting at 1 and increasing up to the total number of ICS in the Database for that pre-defined sampling frame. Applying the random number generators, the ICS can then be randomly chosen from the defined population up to the required sample size as calculated by the project proponent.

To determine the parameters, sampling will involve the following approaches (outcome in brackets):

$N_{y,i,j}$	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)
$B_{y=1,new,i,j,survey}$	Interview with end user and estimate the daily consumption of woody biomass of ICS (Daily consumption of woody biomass)

Sample Size

The procedure to determine the sample of households will ensure that they adequately represent the broader project population, minimizing sampling error. Using, a 90 or 95 per cent confidence level, and a 10 per cent margin of error, a random sample will be selected from each primary sampling unit.

The parameter, number of stoves still in operation during the monitoring period as determined by the monitoring survey ($N_{y,i}$) will be estimated through sampling annually/biennially and the parameter Quantity of woody biomass used by project devices in tonnes per device $B_{y=1,new,i, survey}$ shall be estimated through sampling within the first year of project installation. $B_{y=1,new,i, survey}$ can be coupled with $N_{y,jj}$ for the first year. Of the two parameters to be monitored, $N_{y,i,j}$ is proportion/percentage parameter and $B_{y=1,new,i, survey}$ is a mean value parameter.

In order to calculate the required sample size estimates, values for the proportions, mean values, and standard deviations are required.

As per Guideline for Sampling and surveys for CDM project activities and programmes of activities, version 04.0, there are different ways available to obtain the estimates of the parameter of interest:

- (a) Refer to the result of previous studies and use these results;
- (b) In a situation where information from previous studies is not available, a preliminary sample as a pilot could be conducted and use that sample is used to provide the estimates;
- (c) Use best guesses based on the researcher's own experiences.

Proportion parameter

To estimate the sample size for proportion parameter $N_{y,i,j}$, the following equation is used:

$$n \geq \frac{1.645^2 N \times p \times (1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.645^2 p \times (1-p)}$$

Where:

- | | |
|-------|---|
| n | = Sample size |
| N | = Population size (Total number of households or ICS) |
| p | = Expected proportion |
| 1.645 | = Represents the 90% confidence required
(In the case of 95% confidence, 1.96 shall be used) |
| 0.1 | = Represents the 10% relative precision |

The following assumptions are made to exemplify the sample size calculation for the parameters.

1. An overview of the estimated sample sizes for a hypothetical population of 100,000 ICS units applying a level of 90/10 is provided below. It is likely that all the sample frames for each parameter will include fewer than 100,000 ICS in the first monitoring period, so this is a conservative approach. Hence, population size, N, is taken as 100,000 households/ICS (Assuming one ICS for one household).
2. It is expected at least 80% of ICS still in operation, hence the expected proportion p is taken as 0.8.

Sample size calculation:

The calculation of the required sample size for each parameter in the first monitoring period is illustrated below. In all cases a conservative approach is taken, however if for any parameter the required confidence/precision is not met then the CME will randomly select an additional sample and collect further data from this sample to ensure the pooled data meet or exceed the required thresholds.

Based on the above assumptions, the resulting sampling size is calculated as:

$$n \geq \frac{1.645^2 \times 100,000 \times 0.8(1 - 0.8)}{(100,000 - 1) \times 0.1^2 \times 0.8^2 + 1.645^2 \times 0.8(1 - 0.8)} = 67.61$$

Therefore, in this case a sample size of 68 is to be sampled from each primary sampling unit.

Mean value parameter ($B_{y=1, \text{new}, i, \text{survey}}$)

For the purposes of determining sample size in the first monitoring period, the performance of ICS is characterized by the range of likely mean wood consumption and the likely values of SD relative to the mean, according to the type of ICS. The ICS models that are manufactured in modern factories tend to be very highly efficient (30-50% thermal efficiency) and have been designed to meet stringent efficiency specifications, so the standard deviation is expected to be relatively low.

To estimate the sample size for mean value parameter, the following equation is used:

$$n \geq \frac{1.645^2 NV}{(N - 1) \times 0.1^2 + 1.645^2 V}$$

Where:

$$V = \left(\frac{SD}{mean} \right)^2$$

n = Sample size

N = Population size (Total number of households or ICS)

<i>mean</i>	= Expected mean
<i>SD</i>	= expected standard deviation
1.645	= Represents the 90% confidence required
0.1	= Represents the 10% relative precision

Based on the above assumptions, the sample size calculation would be

$$n \geq \frac{1.645^2 \times 100,000 \times \left(\frac{0.076}{0.38}\right)^2}{(100,000 - 1) \times 0.1^2 + 1.645^2 \times \left(\frac{0.076}{0.38}\right)^2} = 10.82$$

The resulting sample size based on the above equation is smaller than 30 ICS, then as the parameter of interest is a numeric mean value (i.e. not a proportion or percentage) the Student's t-distribution shall be used as per paragraph 14 of "Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities, version 09.0.

The sample size for mean value parameter is referred to the equation below²²:

$$n = \left(\frac{t_{n-1} \times SD}{0.1 \times mean} \right)^2$$

Where t_{n-1} is the value of the t-distribution for 90% confidence when the sample size is n. Since the sample size is not known yet, the first step is to use the value for 90% confidence when the sample is large, i.e. 1.645 and then redefine the calculation.

$$n = \left(\frac{1.645 \times 0.076}{0.1 \times 0.38} \right)^2 = 10.82$$

Thus, n is rounded up to 11.

The calculation now needs to repeat using t-value for 90% confidence and n=11

$$n = \left(\frac{1.812 \times 0.076}{0.1 \times 0.38} \right)^2 = 13.13$$

And n is rounded to 13.

²² Paragraph 102, *Guidelines for Sampling and Surveys in CDM Project Activities and Programme of Activities* (version 04.0)

The calculation now needs to repeat using t_{n-1} value for $n = 13$. The process should be iterated until there is no change to the value of n .

T_{13-1}	1.782
n	12.70
Roundup	13

The repeated calculation shows that $n = 13$. Thus, the sample size to be sampled from each sampling unit is 13.

The project proponent may choose to use the same sample to monitor more than one parameter. According to the Standard for sampling and surveys for CDM project activities and programme of activities, if there is more than one parameter to be estimated, then a sample size calculation should be done for each of them. Then either the largest number for the sample size is chosen as sampling effort with one common survey, or separate sampling efforts and surveys are undertaken for each parameter. For instance, the project proponent may sample separately $N_{y,i,j}$ and $B_{y=1,new,i,j,survey}$ –or a combination of two parameters in the same sample. Sampling more than one parameter within the same sample (household) helps reduce travel needs for monitoring and the associated costs. At the same time this approach ensures the random selection of samples for every parameter.

In order to take care of any attrition, outliers or non-response associated with the sample, an additional 10 to 20 percent samples is identified. The sample size shown above will be adjusted upwards to account for non-responses, Project proponent shall determine the appropriate non-responses rate based on previous experience.

(b) Data to be collected:

(i) Field Measurements:

The table below summarizes field measurement data requirements

Parameter	Timing (indicative)	Frequency as required by methodology	Methods to be applied	Comments on seasonal fluctuation
$N_{y,i,j}$	Monitoring will likely occur every 12 to 24 months	Biennially	Visits to the premises, visual inspection and interview with ICS end-user.	Seasonal fluctuation is not expected to affect this parameter.

$B_{y=1,new,i,j,survey}$	Monitoring will likely occur within the first year after installation	First year of installation	Visits to the premises, visual inspection and interview with ICS end-user.	Seasonal fluctuation is not expected to affect this parameter. However, in case the survey results show a difference, the same shall be taken into account in ER estimation.
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Soft copy of original stove purchase contracts, information collected at the time of registration or other means of acceptance by the users will be stored in the project office. A back-up of the project database will also be stored on an electric medium. All data monitored and required for verification and issuance will be kept for two years after the end of the crediting period or the last issuance of credits for the project activity, whichever is later.

(ii) Quality Assurance/Quality Control

The project proponent will apply measures to ensure the required confidence/precision for each sampled parameter is met, allowing for non-response and the possible removal of outliers from the sample, as part of a Quality Control/Quality Assurance system. The choice of measure applied to each parameter will depend on the cost of each data collection approach and logistics required. The project proponent will determine the most effective measure for each parameter from the following list:

- Oversampling: Randomly draw a sample more than the calculated number (say 20%) and collect data from each
- Buffer Group: Randomly draw additional samples (say 20%) and collect data from only for minimum numbers of ICS as per sample size calculation. If this would not result in the required sample size data would be collected from the additional ICS that were selected in the sample.
- If precision required is not achieved by reliability check, use the lower bound or upper bound of estimates of the parameter.

The CME may choose to stop monitoring a particular parameter once the required level of confidence/precision has been reached, as long as the calculated minimum number of samples has been achieved. As an example, the following steps could logically be followed for the case of applying a 30% buffer:

1. Visit first 10% of premises required for the 30% buffer. If the number of responses is sufficient to achieve the required reliability level, then stop sampling.

2. If step 1 is not sufficient to achieve the required reliability level, then visit the next 10% of premises (increases the additional sampling to 20% of the 30% buffer). If this additional sampling is sufficient, then stop sampling.

The sampling plan has the following procedures in place to ensure good quality data. The project proponent will ensure that field personnel have reviewed, understand and have agreed to follow the monitoring plan procedures, including provisions for maximizing response rates, documenting out-of-population cases, refusals and other sources of non-response. A quality control and assurance strategy will be documented. Quality control and assurance strategies include addressing non-sampling errors, such as non-response or bias from interviewer. The project proponent or a competent third party designated by the project proponent with the proper skills will train the monitoring personnel on how to properly survey households to prevent bias from interviewer. In the case a household refuses to participate, another household will be chosen at random. To reduce interviewer bias, good questionnaire design and well-tested questionnaires will be used.

The sample data for mean value parameter is continuous and therefore the presence of outliers is possible. To identify and address outliers for the parameter, outliers will be defined as those data points with values greater than three standard deviations from the mean of the sample. Data points identified as outliers will be examined further to correct for possible transcription and data entry errors but will be omitted from the analysis if no such administrative errors exist.

(iii) Analysis

The project proponent will manage a project database that includes the following data that can be directly attributable to each batch within the project, thereby allowing unambiguous determination of the emission reductions attributable to each project:

- A list of households participating in each batch / project, including name, community/location, distribution/installation date and unique serial number;
- Testing to ensure that the stoves are still operating above the minimum 25% efficiency required by the methodology, by the project proponent or a third party certified by a national standards body or an appropriate certifying agency recognized by it.
- Where replacements are made, assurance that the efficiency of the new ICS is similar to the specified.

Data obtained from the samples will be used to estimate proportions and mean values for the parameters described above. The values will then be factored into the emissions reduction calculations and result in the request for issuance of VERs. The parameters are applied for emission reduction calculations. The stoves that are not in use will be excluded from emissions reductions calculations and will not be counted towards the total number of ICS in operation during the monitoring period.

(c) Implementation

Sampling for the purpose of emission reduction calculation and elaboration of the monitoring report will occur at the end of each monitoring period. This sampling will be conducted by trained

personal from project proponent or an experienced third-party entity. The credentials and/or training materials for the sampling personal will be provided to the VVB at verification. The maximum length of one monitoring period will be two years (duration, not calendar years), with option for annual or bi-annual monitoring. The project proponent will be responsible for managing household data collection and entry into the project database. Field personnel will receive training on how to properly deal with surveying techniques and reduce errors and sign a document certifying that there is no conflict of interest of those involved in data collection and analysis. The project database will record the start and end dates of each monitoring period and record the emission reductions attributable to each monitoring period. Appropriate record keeping procedures will be implemented to ensure that each monitoring period data set can be transparently attributed to its corresponding batch/project, preventing any occurrences of double counting. An internal review of the project database will be able to determine the current status of each batch – the duration of previous monitoring periods, the households delivering monitoring data, and current verification activities.

(i) Assessment for Leakage:

The methodology provides a net to gross adjustment factor of 0.95 to account for leakages, hence the surveys are not required to determine leakage. All ICS in the project will be newly manufactured/assembled or newly installed.

(ii) Disposal of Low Efficiency Appliances and Use of Baseline Stoves

When an ICS is installed, the end user receives information explaining that conventional open fire appliance must no longer be used. Follow-up meetings with end users will ensure that those who have received an ICS are using it properly and that the conventional open fire is no longer in use.

(iii) Monitoring Reporting

The project proponent will assess all monitoring data and produce a monitoring report for the VVB to verify corresponding to the preceding monitoring period. This report will present the data relating to the emission reductions generated by those batches during the monitoring period.

APPENDIX 1

CQC Website Announcement and Feedback Submission Form [Posted on October 26th, 2020]

October 26, 2020

Local Stakeholder Feedback Requested for Sub-Saharan African Improved Cookstove Projects

C-Quest Capital is developing improved cookstove projects in Angola, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Uganda, Zambia, and Zimbabwe under VERRA/Voluntary Carbon Standard (VCS) and seeks to obtain Voluntary Carbon Units (VCUs). Through the distribution and installation of our energy-efficient cookstoves, we aim to reduce the use of non-renewable biomass for cooking and water boiling for households, particularly in rural areas. To better design these projects, C-Quest Capital is seeking feedback through an online stakeholder consultation process that seeks to gather comments and suggestions.

Feedback on the proposed projects will be collected from **26 October to 25 November 2020**.

Detailed information on the projects is below. Please provide feedback in the form below.

Non-Technical Summaries: [Angola](#), [Kenya](#), [Malawi](#), [Mozambique](#), [Rwanda](#), [Tanzania](#), [Uganda](#), [Zambia](#), and [Zimbabwe](#).

Project Presentations: [Angola](#), [Kenya](#), [Malawi](#), [Mozambique](#), [Rwanda](#), [Tanzania](#), [Uganda](#), [Zambia](#), and [Zimbabwe](#).

Select *

Country

Zimbabwe ▾

Name *

First Name

Last Name

Job Title

Organization Name

Email *

Newspaper Advert

The Herald, Finance and Business Section, Thursday, November 12th 2020 [English]

[illegible]

Invitation Email

Local Stakeholder Consultation Feedback Requested - Improved Cookstoves (Zimbabwe)



Brent Moser (bmoser@CquestCapital.com)
To: Brent Moser (bmoser@CquestCapital.com)
Cc: Jason Steele (jsteele@CquestCapital.com)

Reply Reply All Forward ...

Wed 11/4/2020 11:14 AM

Dear Madam / Sir:

As the Project Participant, C-Quest Capital would like to request local stakeholders in Zimbabwe to provide feedback on their proposed improved cookstove project for Zimbabwe. The project has been developed under VERRA/Voluntary Carbon Standard (VCS) and seeks to obtain Voluntary Carbon Units (VCUs). This program plans to disseminate and install high efficiency firewood cookstoves to poorer households in Zimbabwe that cook with open-fires with the goal to significantly reduce the dependency on Zimbabwe's remaining natural resources, reduce greenhouse gas emissions related to cooking, and contribute to improved health outcomes for the end-user. Carbon finance will be the primary source of funding for this program.

All program information including non-technical summary and project presentation is located on our website: <https://cquestcapital.com/blog/ssalsc>

You can provide feedback by replying to this email or through the feedback form on our website via the link above.

Please provide any feedback by **25 November 2020**.

Brent Moser
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Invitation List

No.	Organization	Name of Invitee	Title	Email Address
1	Ministry of Energy & Power Development (MOEPD)	Hon. Fortune Chasi , M.P	Minister	moepd@energy.gov.zw
2	Ministry of Environment, Water and Climate	Tanyaradzwa Mundoga	Minister	tmundoga@gmail.com
3	Ministry of Higher and Tertiary Education, Science and Technology Development	HON. AMON MURWIRA	Minister	admin@mhtestd.gov.zw
4	Ministry of Health and Child Care	HON. OBADIAH MOYO	Minister	pr@mohcc.gov.zw

5	Ministry of Lands, Agriculture, Water, Climate and Rural Resettlement (MLAWCRR)	HON. PERRANCE SHIRI, M.P.	Minister	info@moa.gov.zw : moa@moa.gov.zw
6	Ministry of Youth, Sport, Arts and Recreation	DR THOKOZILE CHITEPO, PERMANENT SECRETARY	Permanent Secretary	postmaster@mydie.gov.zw
7	ZWLA			zwla@zwla.co.zw
8	University of Zimbabwe	Mr T. Hove		Tawandahv2@yahoo.co.uk
9	Scientific and Industrial Research & Development Institute (SIRDC)	P. Madzore		tzvoma@sirdc.ac.zw
10	United Nations Development Programme (UNDP)	Sid sel		registry.zw@undp.org : anne.madzara@undp.org : communications.zw@undp.org
11	UNDP-GEFSGP	T.Wutawunashe		Tsitsi.wutawunashe@undp.org
12	PINDUKA TRUST			clarakawotsa@gmail.com
13	Harare Institute of Technology (HIT)		Vice Chancellor	communications@hit.ac.zw
14	Chinhoyi University	Musademba		dmusademba@gmail.com
15	RESEARCH COUNCIL OF ZIMBABWE			symposium@rcz.ac.zw
16	BINDURA UNIVESITY	S. Chiminya		silvachims@gmail.com
17	CHRISTIAN CARE	Regis Makoni		communications@ccare.co.zw
18	WISDOMSTOVE S	Edward Matuvhunye		matuvhunye@gmail.com
19	JEPA TRUST	M.Hapadziwi		mhapadziwi@yahoo.com

20	German Corporation for Int'l Cooperation (GIZ)			giz-zimbabwe@giz.de
21	UNICEF	J. Magwenzi		jmagwenzi@unicef.org
22	HIVOS	R..Mapfumo		E.rosaf@hivos.co.zw ; chuma@hivos.co.zw
23	Rural Electrification Fund	F. Nyikayaramba		fnyikayaramba@rea.gov.zw
24	Food & Agriculture Organization of the UN (FAO)	Alain Onibon	FAO Representative in Zimbabwe	FAO-ZW@fao.org
25	Standards Association of Zimbabwe (SAZ)	F.M.Chipendo		fchipendo@saz.org.zw ; info@saz.org.zw
26	TREEES	P. Mushamba		pmushamba@yahoo.co.uk
27	Buisness Council for Sustainable Development Zimbabwe (BCSDZ)	Tawanda Muzamwese		bcsdzimbabwe@gmail.com
28	NORTH WEST UNIVERSITY	L.Pisa		Lpisa86@gmail.com
29	GOAL ZIMBABWE			info@us.goal.ie
30	International Non-Governmental Organisations (OCHA)			goal@goalzimbabwe.org
31	Practical Action	S.Ncube		zibusisoN@practicalaction.org.uk
32	ASTI - RUZIVO TRUST	Dr Matonde		prosper@ruzivo.co.zw
33	Safire	E. Toperesu		estella@safire.co.zw
34	Safire	Patson Makwiramiti		patson@safire.co.zw

35	Environmental Management Agency (EMA)	T. Chinogwenya		eeep@ema.co.zw : tchinogwenya@gmail.com
36	FORESTRY COMMISSION			info@forestry.co.zw
37	BIO-HUB TRUST	Abbie Jiri		biohub@zol.co.zw
38	ENVIRONMENT AFRICA			info@environmentafrica.org
39	ZERO (Regional Environment Organization)	W.Madumira		madumira@gmail.com
40	ZERA	T. Mudzingwa		admin@zera.co.zw
41	World Vision	Khumbulani Ndlovu	Integrated Programmes Director	khumbulani_ndlovu@wvi.org
42	World Vision	Shamiso Matambanadzo	Advocacy, Communication s & External Engagements Team Lead	shamiso_matambanadzo@wvi.org
43	Action Against Hunger	Alison Baggen	Head of WASH Program	washco@zw-actionagainsthunger.org
44	UNFPA	Dr. Esther Muia	Representative in Zimbabwe	mailzwe@unfpa.org
45	Heal Zimbabwe			healzimbabwe29@gmail.com
46	TechnoServe	Pamela Chitenhe	Regional Director Souther Africa	pchitenhe@tns.org
47	Heifer Int'l	Kainos Musvinu	Country Director	kainos.musvinu@heifer.com
48	Practical Action	Abigail Mapara	Business Development Leader	Abigail.mapara@practicalaction.org.zw

List of Attendees

No.	Organization	Name	Title
1	Evangelical Church of Zimbabwe	Dr. Issac Soda	The Bishop
2	Evangelical Church of Zimbabwe	Dr. Morgan Dewah	Admin Chairperson
3	Evangelical Church of Zimbabwe	Gladys Itai Dewah	Ladies Fellowship
4	Evangelical Church of Zimbabwe	Elector Soda	Ladies Fellowship

5	Environmental Management Agency (EMA)	Tawanda Chinogwenya	
6	Ministry of Energy and Power Development	B M Mangwende	Deputy Director
7	Ministry of Energy and Power Development	Cliff Nhandara	REA
8	Ministry of Energy and Power Development	Cassandra Kadenha	
9	Ministry of Environment, Climate Change, Tourism and Hospitality Industry	Kudawashe Manyanga	Department of Climate Change
10	Dema District, Mashonaland East	Tariro Matongo	Community Member
11	Dema District, Mashonaland East	Aqueline Mazireni	Community Member
12	Dema District, Mashonaland East	Tecky Mudiwa	Community Member
13	Dema District, Mashonaland East	Ruvimbo Bororwi	Community Member
14	Dema District, Mashonaland East	Evidence Mandibatsira	Community Member

List of Electronic Feedback Providers

No.	Organization	Name	Title	Email Address	Date Received
1	S M Ukama Enterprises P/L	Sylvester Ukama	Business Development Manager	sumasotsha@gmail.com	12-Nov-20
2	Kuhlubuka Development Trust	David Mangemba	Finance and Business Development	mangembad@gmail.com	4-Nov-20