



REDUCED EMISSIONS FROM IMPROVED AND EFFICIENT COOKING IN UGANDAN COMMUNITIES



PERSISTENTCLIMATE INDIA PRIVATE LIMITED

Project title	Reduced Emissions from Improved and Efficient Cooking in Ugandan Communities
Project ID	3045
Monitoring period	01-August-2022 to 31-December-2023 (inclusive of both days)
Original date of issue	07-February-2024
Most recent date of issue	24-July-2024
Version	1.3
VCS Standard Version	4.6
Prepared by	PERSISTENTCLIMATE INDIA PRIVATE LIMITED

CONTENTS

PROJECT DETAILS	4
1.1 Summary Description of the Implementation Status of the Project	4
1.2 Audit History.....	6
1.3 Sectoral Scope and Project Type	6
1.4 Project Proponent	6
1.5 Other Entities Involved in the Project	7
1.6 Project Start Date	7
1.7 Project Crediting Period	7
1.8 Project Location	7
1.9 Title and Reference of Methodology	9
1.10 Double Counting and Participation under Other GHG Programs	9
1.11 Double Claiming, Other Forms of Credit, and Scope 3 Emissions.....	10
1.12 Sustainable Development Contributions	11
1.13 Commercially Sensitive Information.....	19
2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT	19
2.1 Stakeholder Engagement and Consultation.....	19
2.2 Risks to Stakeholders and the Environment.....	22
2.3 Respect for Human Rights and Equity	23
2.4 Ecosystem Health	25
3 IMPLEMENTATION STATUS	26
3.1 Implementation Status of the Project Activity	26
3.2 Deviations	27
3.3 Grouped Projects	28
3.4 Baseline Reassessment.....	28
4 DATA AND PARAMETERS.....	28
4.1 Data and Parameters Available at Validation	28
4.2 Data and Parameters Monitored.....	34
4.3 Monitoring Plan.....	39
5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS	49
5.1 Baseline Emissions	49

5.2	Project Emissions	51
5.3	Leakage Emissions	51
5.4	GHG Emission Reductions and Carbon Dioxide Removals	51
APPENDIX 1: COMMERCIALY SENSITIVE INFORMATION.....		55
APPENDIX 2: MONITORING SURVEY FORM		55

PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The grouped Project entitled “Reduced Emissions from Improved and Efficient Cooking in Ugandan Communities” aims to reduce greenhouse gas emissions by distributing fuel-efficient Improved Cook Stoves (ICS) in various regions of Uganda.

PERSISTENTCLIMATE INDIA PRIVATE LIMITED, (hereinafter called “PersistentClimate”) is the project proponent (PP) for the proposed Project. PersistentClimate is a company registered in India and will facilitate the distribution of the ICS’ to households in Uganda (beneficiaries).

PERSISTENTCLIMATE INDIA PRIVATE LIMITED in Uganda has implemented measures in place to ensure that all requirements with respect to the applied VERRA monitoring methodology of the proposed grouped projects are sufficiently met. Requirements including data, required for accurate and conservative quantification of emissions reductions and other Sustainable Development Impacts (SDIs), including but not limited to record-keeping and performing household surveys at a regular interval, are met.

The Project Implemented by PersistentClimate India Private Limited with local partners in Uganda increased access of households and communities to improved cookstoves by disseminating Improved Cook Stoves featuring high thermal efficiency and low greenhouse gas emissions. These ICS are distributed across the households and communities in Uganda, replacing previously used traditional devices, typically featuring low fuel efficiency and high rates of emissions among not only greenhouse gas emissions but also particulate matter and other emissions detrimental to health and posing risks of fire. The implementation of this Project resulted in the reduction of firewood/wood fuel (charcoal) consumption & associated greenhouse gas emissions in a sustainable manner. Project objectives include reduction of greenhouse gases, conservation of forests and woodlands as well as improved health conditions of ICS users due to improved indoor air quality along with drudgery reduction in everyday cooking.

Under this grouped project, in the first instance the following three models of stoves were installed:

1. Burn Kuniokoa Cookstove (Wood fired)
2. Burn Jikokoa (Charcoal Fired)
3. Masupa stoves (Charcoal Fired)

The end users were informed that carbon finance is being generated by the use of the ICS, and this finance is in turn used to facilitate the access to ICS and helps to cover project implementation costs.

Relevant implementation dates (e.g., dates of commissioning, and continued operation periods)

Milestone of the project	Timeline
Crediting period	02-January-2021 to 01-January-2031
1st monitoring period successfully verified	02-January-2021 to 31-July-2022

Installation of ICS

Milestone of the project	Timeline
Date of first ICS installed	02-January-2021
Total no. of ICS distributed till end of date MP (31-December-2023)	58,793

First monitoring survey

Survey dates for parameters $N_{y,i,j}$ and μ_y	19-December-2023, 20-December-2023, 21-December-23, 22-December-2023, 28-December-2023, 29-December-2023, 30-December-2023
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Stove Model	Fuel used	Total Number of Distributed ICS
Jikokoa	Wood fired Stove	13027
Masupa	Charcoal fired stove	45,217
Kuniokoa	Charcoal fired stove	549

The total GHG emission reductions or removals generated in the current monitoring period:

Project Number Under Grouped VCS Project	VERs
Project 01--Woody Biomass	3,850
Charcoal	449,753
Total VERs	453,602

The project results in a total emission reduction of 453,602 tCO₂e over the monitoring period of 01-August-2022 to 31- December-2023 (inclusive of both days) .

1.2 Audit History.

Audit type	Period	Program	Validation/verification body name	Number of years
Validation/verification	02-January-2021 to 31-july-2022	VCS	4K Earth Science Private Limited (4KES)	1 year 6 months 29 days
Verification	01-August-2022 to 31-December-2023	VCS	VKU certification private limited	1 year 4 months 30 days

1.3 Sectoral Scope and Project Type

Sectoral scope ¹	Sectoral Scope:03- Energy Demand
Project activity type	Type II – Energy Efficiency Improvement Project
Grouped Project	Yes

1.4 Project Proponent

Organization name	PERSISTENTCLIMATE INDIA PRIVATE LIMITED
Contact person	PRAKASH KUMAR MISHRA
Title	Founder and Managing Director.
Address	K- 255, Pocket K Sarita Vihar- New Delhi-110076 India
Telephone	+91- 9811905234

¹ Projects, activities, or methodologies may be developed under any of the 16 VCS sectoral scopes: <https://verra.org/programs/verified-carbon-standard/vcs-program-details/#sectoral-scopes>

Email	prakashpure@gmail.com p.mishra@persistentclimate.com <u>admin@persistentclimate.com</u>
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1.5 Other Entities Involved in the Project

Organization name	EZYLIFE HOLDINGS LTD
Role in the project	local distribution partner
Contact person	Lister Byamugisha
Title	Mr.
Address	Kapchorwa, Uganda
Telephone	+256 787818792
Email	lbyam@ugezylife.com

1.6 Project Start Date

Project start date	02-January-2021
Justification	The date on which the first ICS was distributed under the project.

1.7 Project Crediting Period

Crediting period	☐ Seven years, twice renewable ☒ Ten years, fixed ☐ Other (state the selected crediting period and justify how it conforms with the VCS Program requirements)
Start and end date of first or fixed crediting period	02-January-2021 to 01-January-2031

1.8 Project Location

The geographic boundaries, within which project technologies (ICS) is distributed are the political boundaries of the Host Country of Uganda. The physical location of each device/ICS distributed as a project activity instance under the implemented grouped Project is the actual project activity

UGANDA

Legend:

- Capital city (Star)
- Lira (Red dot)
- Town (Black dot)
- Town size (Circle size)
- Sub-region (Color)
- The Nile (Blue line)
- International Border (Dashed line)
- Neighbouring Country (Text)
- Elgon (Triangle)
- Albert (Blue box)
- Lake (Blue area)

Scale: 0 50 100 km

Map Labels:

- Cities/Towns:** Juba, Arua, Kitgum, Acholi, Gulu, Lira, Lango, Moroto, Karamoja, Soroti, Teso, Mbale, Mt Elgon, Kiseni, Jinja, Busoga, Kampala, Masindi, Bunyoro, Hoima, Toro, Fort Portal, Ankole, Mbarara, Kigezi, Masaka, Ruwenzori.
- Lakes:** Lake Albert, Lake Edward, Lake Kyoga, Lake Kyoga, Lake Kyoga.
- Regions:** West Nile, Lango, Karamoja, Toro, Ankole, Kigezi.
- Neighboring Countries:** SOUTH SUDAN, KENYA, RWANDA, TANZANIA, DEMOCRATIC REPUBLIC OF CONGO.

Inset Map: Shows the location of Uganda in East Africa, with a red dot indicating its position.

Latitude	Longitude
1.373333 N	32.290276 E
1° 22' 23.9988" N	32° 17' 24.9936" E

1. Mbale:

2. Jinja:

3. Tororo:

4. Wakiso:

5. Sironko tc:

Latitude	Longitude
1° 13' 60.00" N	34° 14' 60.00" E

6. Kampala:

Latitude	Longitude
0° 18' 58.61" N	32° 34' 55.88" E

7. Manafwa:

Latitude	Longitude
0° 55' 11" N	34° 17'28" E

1.9 Title and Reference of Methodology

Type (methodology, tool or module).	Reference ID, if applicable	Title	Version
Methodology	VMR0006 ²	VMR0006- Methodology for Installation of High Efficiency Firewood Cookstoves	1.1
Tool	Tool 30 ³	Calculation of the fraction of non-renewable biomass	03

1.10 Double Counting and Participation under Other GHG Programs

1.10.1 No Double Issuance

Is the project receiving or seeking credit for reductions and removals from a project activity under another GHG program?

☐ Yes

☒ No

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

² <https://verra.org/wp-content/uploads/imported/methodologies/VMR0006-Methodology-for-Installation-of-High-Efficiency-Firewood-Cookstoves-v1.1.pdf>

³ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-30-v3.0.pdf>

1.10.2 Registration in Other GHG Programs

Is the project registered or seeking registration under any other GHG programs?

☐ Yes ☒ No

1.11 Double Claiming, Other Forms of Credit, and Scope 3 Emissions

1.11.1 No Double Claiming with Emissions Trading Programs or Binding Emission Limits

Are project reductions and removals or project activities also included in an emissions trading program or binding emission limit? See the *VCS Program Definitions* for definitions of emissions trading program and binding emission limit.

☐ Yes ☒ No

1.11.2 No Double Claiming with Other Forms of Environmental Credit

Has the project activity sought, received, or is planning to receive credit from another GHG-related environmental credit system? See the *VCS Program Definitions* for definition of GHG-related environmental credit system.

☐ Yes ☒ No

1.11.3 Supply Chain (Scope 3) Emissions

Do the project activities affect the emissions footprint of any product(s) (goods or services) that are part of a supply chain?

☐ Yes ☒ No

The emissions footprint of the cookstoves is unaffected by the project's distribution activities. Despite being part of a supply chain, the grouped project activity does not alter the product in a way that would change its emissions profile. Since the response to the previous question is "No," the rest of this section is left blank.

If yes:

Is the project proponent(s) or authorized representative a buyer or seller of the product(s) (goods or services) that are part of a supply chain?

☐ Yes ☐ No

If yes:

Has the project proponent(s) or authorized representative posted a public statement on their website saying, "Carbon credits may be issued through the Verified Carbon Standard project [project ID] for the greenhouse gas emission reductions or removals associated with [project

proponent or authorized representative organization name(s)] [name of product(s) whose emissions footprint is changed by the project activities].”

☐ Yes

☐ No

1.12 Sustainable Development Contributions

The sustainable development contributions achieved by the group project activity are as follows:

Table 1: Sustainable Development Contributions

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over Monitoring Period
Sequential row number	SDG Target number	Number and text of SDG indicator or, if no official SDG indicator is applicable, user-defined indicator	Indicate the project's contribution to the SDG Indicator (implemented activities to increase or decrease)	Brief description of the quantifiable impact of the project's activities related to the SDG indicator, during the monitoring period.	Brief description of the cumulative quantifiable impact of the project's activities related to the SDG indicator, over the project lifetime.

1)	3.9	3.9.1	By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	The efficient cook stove leads to a reduction in fuel consumption and as a consequence to an improvement in indoor air quality. This has positive impacts on decreasing in health-related issues like respiratory problems, eye and throat irritations. The relevant indicator is: Mortality rate attributed to household and ambient air pollution.	The contribution to SDG 3 is calculated as the number of households confirming improvement in air quality. To collect information on the improvement of air quality, the Monitoring Kitchen Survey includes 2 questions related to that topic: Do you think there is any difference in how much smoke is produced by the improved stove compared to the 3-stone fire? Do you think the improved stove produces more or less smoke than the 3-stone? The share of households confirming	Mortality rate attributed to household and ambient air pollution. The project has achieved the reduction in smoke and thus prevented the mortality rate in the households. Reduction of 100% smoke as resulted in 100% reduction in incidence of itchy eyes. PP has undertaken a monitoring survey clubbed with the other survey as part of SDG#13.
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				less smoke by the improved stove in the Monitoring Kitchen Survey is multiplied with the number of stoves disseminated under the specific VPA and results in the number of households confirming improvement in air quality. $S_{\text{(less smoke)}} = S_{\text{install}} \times \left[\frac{HH_{\text{(less smoke,y)}}}{U_{\text{(p,y)}}} \right]$ $S_{\text{less smoke}}$ = No of households with improved in-air quality S_{install} = Number of stoves installed $HH_{\text{(less smoke,y)}}$ = Share of households confirming less smoke	
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				through improved stove $U_{p,y}$ = Usage rate in year y	
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2)	5.4	5.4.1 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate. Proportion of time spent on unpaid domestic and care work, by sex, age and location	Women and girls perform the majority of unpaid domestic work. This leaves them with less time to rest, study and realise their economic potential, leaving them in time poverty. In regards to time, women are poorer than men as unpaid domestic duties, such as collecting firewood, must be added to their market productive work, making time much scarcer. Women are widely recognized as being principally responsible for natural resource collection. These trends demonstrate that reducing the amount of firewood	The overall reduction in time spent collecting firewood by the project activity are then calculated as follows: $TR_y = (T_{b,y} - T_{p,y}) / T_{b,y}$ Where: TR_y = Total reduction time spent collecting firewood for project activity in year y (%) $T_{b,y}$ = Baseline time spent collecting firewood per household per day (hours) $T_{p,y}$ = Project time spent collecting firewood per household per day (hours)	Reduction in time spent collecting fuelwood from the forests or charcoal from market. PP has undertaken a monitoring survey clubbed with the other survey as part of SDG#13, the survey was designed in such a manner to capture the per week hours' time before project stove implementation and after. The time saving is calculated as below: <table><tr><th>Time spent in fuel collection per week before ICS Purchase (Hrs)</th><th>Time spent in fuel collection per week after ICS Purchase (Hrs)</th><th>Time saved for collecting fuel after purchasing Project ICS</th></tr><tr><td>1.683</td><td>0.840</td><td>0.843</td></tr></table>	Time spent in fuel collection per week before ICS Purchase (Hrs)	Time spent in fuel collection per week after ICS Purchase (Hrs)	Time saved for collecting fuel after purchasing Project ICS	1.683	0.840	0.843
Time spent in fuel collection per week before ICS Purchase (Hrs)	Time spent in fuel collection per week after ICS Purchase (Hrs)	Time saved for collecting fuel after purchasing Project ICS									
1.683	0.840	0.843									

			required by households has the potential to reduce the time poverty of women, because the time burden of collecting firewood, which falls disproportionately on women, will be reduced. The average % decrease per household in time spent gathering firewood will be taken as a proxy contribution towards the SDG target.		
3)	7.3:	7.3.1 By 2030, double the global rate of improvement in energy efficiency	For this project, the baseline scenario is the number of households using traditional cookstoves. This project increases the adoption rate of efficient cookstoves.	The outcome of SDG 7 will be measured by the number of efficient cookstoves distributed during the project.	Number of project households predominantly using clean cooking devices such as Improved Cook Stoves.

4)	8.1	8.1.1 Sustain per capita economic growth in accordance with national circumstances and, in particular, at least 7 per cent gross domestic product growth per annum in the least developed countries.	The survey will be undertaken to arrive the figure of monitory saving after implementing energy efficient stove.	The outcome of SDG 8 will be measured by survey.	Monitory saving will be monitored through the project survey. PP has undertaken a monitoring survey clubbed with the other survey as part of SDG#13, the survey was designed in such a manner to capture the monitory saving as a result of ICS purchase. The saving is calculated as below: <table><tr><td>How much money is being saved each month after using the ICS? (Percentage)</td><td>How do you use your financial savings, mentioned above?</td></tr><tr><td>UGX 21,646</td><td>37.64%</td></tr></table>	How much money is being saved each month after using the ICS? (Percentage)	How do you use your financial savings, mentioned above?	UGX 21,646	37.64%
How much money is being saved each month after using the ICS? (Percentage)	How do you use your financial savings, mentioned above?								
UGX 21,646	37.64%								
5)	13.3.	Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning	Implemented activities to increase	The emission reductions will be quantified as per the methodology applied.	GHG Emissions measured in tons CO₂ Emission Reduction achieved during this monitoring period (tCO₂e) is 453,602 tCO₂e.				

- Distributed more than 50,000 (58,793) ICS' in Uganda, benefitting more than 50,000 individuals from clean, efficient/improved and affordable energy (SDG 7.1.2) in phase manner.
- Reduced the total biomass usage in the project area to generate 453,602 tCO₂e of emission reductions. (SDG 13; and SDG 7).
- Significantly reduced Indoor/Household Air Pollution (HAP) in the households due to reduced exposure to PM and/other emissions (SDG 3.9.1)
- Reduction of respiratory disease, due to improved combustion efficiency and consequently less fumes, such as Chronic Obstructive Pulmonary Disease (COPD) among adult family members, particularly women and the elderly. (SDG 3.4.1)
- Reduced the risk of mortality among infants and children under five years of age due to (1) acute lower respiratory illnesses (ALRI), such as pneumonia and bronchitis, the cause of mortality in 12% of children under five, and (2) burns resulting from children falling into open cooking fires. (SDG 3.2.1, 3.2.2) and risk of fire due to open and shoot production in inefficient cooking ways.
- Reduced the proportion of time generally women spend on unpaid domestic work related to collection of firewood, and cooking meals on inefficient traditional cookstoves which is generally slower in cooking meals and thus more time for cooking. (SDG 5.4.1)
- Fuel/money savings to the households and communities due to less fuel/biomass consumption. Table 2: Sustainable Development Contributions (SDG 8)

1.13 Commercially Sensitive Information

Commercially sensitive information has been excluded from the public version of the monitoring report.

2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

Not applicable since no change since validation is observed for the stakeholders. The Local Stakeholder meeting was conducted physically on the 06th of June 2022, which was validated by the validation agency. Stakeholders were identified as relevant NGOs, local authorities and representative of households that directly or indirectly impact on the project activities. The invitations were sent out on email and the newspaper advertisements were published on 09-May-2022. A continuous feedback mechanism system is in place which is correctly outlined in section 2.1.4 of the MR. VVB during the remote site verification confirmed that there was no negative comment or feedback from local stakeholders as recorded by the verification team and no outstanding grievances to be addressed during this monitoring period.

Stakeholder Identification	N/A
Legal or customary tenure/access rights	N/A
Stakeholder diversity and changes over time	N/A
Expected changes in well-being	N/A
Location of stakeholders	N/A
Location of resources	N/A.

2.1.2 Stakeholder Consultation and Ongoing Communication

During current monitoring period no complains raised by stakeholders, also no issues were identified in previous stakeholder meeting which requires change in process or mitigation measures.

The stakeholders are encouraged to provide ongoing feedback/grievance as part of continuous ongoing stakeholder communication. The stakeholders are communicated through the house visits, at the time of monitoring survey also, field staff recorded the feedback from the local stakeholders. And also, a register is placed at the office of distribution partners.

Currently, PP has a robust feedback and grievance redress policy and procedure in order to ensure that grievances of project-affected communities and individual stakeholders are properly handled and addressed. These procedures are implemented to enhance PP's accountability and transparency, as well as to promote project activities that can help communities in identifying adverse effects to them or their environment that PP had not previously identified and mitigated. No grievances were received during the current monitoring period

Ongoing consultation	The stakeholders are encouraged to provide ongoing feedback/grievance as part of continuous ongoing stakeholder communication. The stakeholders are communicated through the house visits. At the time of monitoring survey also, field staff recorded the feedback from the local stakeholders. And also, a register is placed at the office of distribution partners. All the above information has been confirmed by the VVB during the remote audit.
Communication of monitored results	The stakeholders were interviewed on many aspects under monitoring survey including any feedback or grievance with the project technology/services were also performed by the PD on sample basis. The PD survey team randomly selected the households from the database for this purpose and record the information related to regular usage of project ICS, the physical condition of the project ICS, benefits due to the usage of ICS, information related to usage of continued use of baseline cook stoves etc, along with any additional feedback. All the results obtained from the household visits are recorded on the monitoring survey forms which have been submitted to the VVB.
Consultation records	A register is placed at the office of distribution partners.
Stakeholder input	The minutes of the meeting were recorded by the project participant at validation and no grievance or feedback received for the applied monitoring period, However, project end users/

	stakeholders are given the contact details by the PD at the time of ICS distribution. There are no updates to the project design.
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2.1.3 Free, Prior, and Informed Consent

Consent	A default distribution agreement for end users including the provision that emission reductions generated by the stove are owned by the project proponent is provided for the project instance. Waiver of carbon credits from the end users is submitted to the VVB for this instance.
Outcome of FPIC	Waiver of carbon credits from the end users is submitted to the VVB for this instance.

2.1.4 Grievance Redress Procedure

The stakeholders are encouraged to provide ongoing feedback/grievance as part of continuous ongoing stakeholder communication. The stakeholders communicated during the house visits. At the time of monitoring survey also, field staff recorded the feedback from the local stakeholders. And also, a register is placed at the office of distribution partners.

PP has a robust feedback and grievance redress policy and procedure in order to ensure that grievances of project-affected communities and individual stakeholders are properly handled and addressed. These procedures are implemented to enhance PP's accountability and transparency, as well as to promote project activities that can help communities in identifying adverse effects to them or their environment that PP had not previously identified and mitigated.

The stakeholders and end users are well aware of where to contact in case their cookstoves do not work or they face difficulties operating them. They have the contact number and address of the responsible person for grievance redressal. However, as of the latest monitoring survey, no end user or stakeholder has made a call to register any grievances

No grievances were received during the current monitoring period.

Grievances received	Resolution and outcome
No grievance raised during the monitoring period.	-

2.1.5 Public Comments

There were no comments received during the stakeholder consultation and the 30 days listing period. The VCS PD was open for the public comment for 30 days period (22 July 2022 – 21 August 2022) on VCS registry.

Summary of comments received	Actions taken
No comments received during the stakeholder consultation and the 30 days listing period.	-

2.2 Risks to Stakeholders and the Environment

	Risk identified	Mitigation or preventative measure taken
Risks to stakeholder participation	No risk identified	- The proposed project activity will promote improved cookstoves that result in reduced fuel consumption and emissions due to cooking and heating water in homes so no risk identified to the stakeholder
Working conditions	No risk identified	- Due to project implementation, less time is required to collect fuelwood, which is now utilized for valuable activities such as education. working condition of the women and the girls.
Safety of women and girls	No risk identified	Less usage of fuelwood results in lower physical burden for women and girls, who often have to travel long distances and spend extended hours collecting it. Additionally, it minimizes conflicts between wildlife and humans. As a result, there is a decrease in the proportion of unpaid domestic and care work,

Safety of minority and marginalized groups, including children	No risk identified	- The reduction of smoke in the kitchen improves the health of women and children, leading to a decrease in health risks from indoor air pollution. As a result, it contributes to the reduction of mortality rates attributed to household and ambient air pollution
Pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials)	No risk identified	- The amount of indoor pollutants from burning of fuelwood in the kitchen will be reduced. Less carbon-di-oxide, carbon mono oxide, black carbon will be emitted due to the decrease in total fuelwood consumption.

No negative environmental impacts have been identified from the project and does not require any specific license/approval from host country. No potential negative environmental or socio-economic impacts have been identified for the project activity.

2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

No potential negative socio-economic impacts have been identified for the project activity

Discrimination and sexual harassment	No discrimination or sexual harassment has occurred.
Management experience	Not applicable
Gender equity in labor and work	The working conditions were designed to foster more inclusive work environment and support gender equity. The PP encourages gender diversity at all levels of the organization, including leadership positions. By implementing these measures, PP ensures that equal opportunities have been provided in the context of gender equity and pay for labor and work.
Human trafficking, forced labor, and child labor	The project involves the distribution of Improved Cookstoves which are mainly manufactured/assembled locally in Uganda. The process explicitly excludes the involvement of children. Furthermore, the project does not involve in any kind of forced labor/compulsory labor

and the PP ensures that all employment is in compliance with local labor regulations and laws.

2.3.2 Human Rights

Not Applicable No discrimination or sexual harassment were reported during the implementation of the project activity. The project activity implemented by PersistentClimate seeks to increase access to households and communities to improved cookstoves by disseminating ICSs featuring high thermal efficiency and low greenhouse gas emissions, in which users are free to choose. This project is a voluntary action by the PP and no risk and issues to the internationally proclaimed human right are expected from the implementation of this project. The PP respects human right and are not complicit in violence or human rights abuses. The project activity has significantly reduced Indoor/Household Air Pollution (HAP) in the households due to reduced exposure to PM and/other emissions (SDG 3.9.1). Reduction in the risk of mortality among infants and children under five years of age due to (1) acute lower respiratory illnesses (ALRI), such as pneumonia and bronchitis, the cause of mortality in 12% of children under five, and (2) burns resulting from children falling into open cooking fires. (SDG 3.2.1, 3.2.2) and risk of fire due to open and shoot production in inefficient cooking ways. The project does not involve in any kind of forced labour/compulsory labour and the PP ensures that all employment are in compliance with local labour regulations and laws. The project also resulted in burden on women due to the reduced need to collect fuel for cooking.

2.3.3 Indigenous Peoples and Cultural Heritage

Not Applicable. The project activity implemented brought positive impact on the people helping them to reduce the time spent for fuel collection and reduced the time spend for cooking. Consequently, it enables them to redirect their focus towards other economically viable activities.

2.3.4 Property Rights

Disputes over rights to territories and resources	N/A , no disputes over territories or resources occurred during the current monitoring period
Respect for property rights	No property rights are violated due to this project activity.

2.3.5 Benefit Sharing

Summary of the benefit sharing plan	The implemented project is the distribution of improved Cookstoves (ICS) among households and communities in Uganda with the objective to displace traditional, unimproved cookstoves and open fires for cooking. The PP ensures that the implemented project does not encroach on
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	private, stakeholder, or government property or relocate people off their lands without prior consent and appropriate compensation. The project does not lead to forced physical or economic displacement. Thus, as per clause 3.19.22 of VCS Standard version 4.6, this is not applicable since this project does not impact property rights, usage or resources.
Benefit sharing during the monitoring period	Not applicable since this project does not impact property rights, usage or resources.

2.4 Ecosystem Health

	Risk identified	Mitigation or preventative measure taken during the monitoring period
Impacts on biodiversity and ecosystems	No risk identified	No adverse impacts on biodiversity and ecosystems were identified
Soil degradation and soil erosion	No risk identified	No adverse impacts on soil degradation and soil erosion were identified
Water consumption and stress	No risk identified	No adverse impacts were identified
Usage of fertilizers	No risk identified	The project activity does not use any fertilizer.

2.4.1 Rare, Threatened, and Endangered species

Species or habitat	Not Applicable, The project activity implemented by PersistentClimate seeks to increase access to households and communities to improved cookstoves by disseminating ICSs featuring high thermal efficiency and low greenhouse gas emissions. This effort leads to the reduction of firewood/charcoal consumption, thereby reduces the dependency on forests. Consequently, the implementation of this project activity has a positive impact on the conservation of rare, threatened and endangered species.
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2.4.2 Introduction of species

Not Applicable, since this table is not required for projects with no planting or species introduction.

2.4.3 Ecosystem conversion

Not Applicable, as this is not an ARR, ALM, WRC or ACoGS project. The project activity implemented by PersistentClimate seeks to increase access to households and communities to improved cookstoves by disseminating ICSs featuring high thermal efficiency and low greenhouse gas emissions, reduces the dependency on forests and ensures prevention of ecosystem conversion.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

No events occurred during this monitoring period that impact the GHG emission reductions or carbon dioxide removals and monitoring.

The grouped Project entitled “Reduced Emissions from Improved and Efficient Cooking in Ugandan Communities” aims to reduce greenhouse gas emissions by distributing fuel-efficient Improved Cook Stoves (ICS) in various regions of Uganda.

PersistentClimate is the project proponent (“PP”) for the proposed Project. The ongoing initiative remains dedicated to enhancing and optimizing manufacturing procedures and maintaining high quality. As the project advances and utilizes carbon revenues, project partners will expand the manufacturing and distribution of all project technologies.

The following three models of stoves were disseminated under this group project activity targeted rural households using traditional, unimproved cook stoves and open fires for cooking:

1. Burn Kuniokoa Cookstove (Wood fired)
2. Burn Jikokoa (Charcoal Fired)
3. Masupa stoves (Charcoal Fired).

The ICS distributed under this grouped project were tested for efficiency in third party lab - (CREEC-Centre for research in energy and energy conservation, KIRDI Stove Testing Centre) in the beginning of the crediting period.

The calculation of energy saving (GWh/year) is provided in the ER Calculation sheet and is provided below:

STOVE TYPE	ENERGY SAVING (GWh/Year)
------------	--------------------------

B _{y,saving, 1,Masupa}	0.01435925
B _{y,saving, 2,BURN Jikokoa}	0.017282916
B _{y,saving, 3Kuniokoa}	0.013428725

The Implemented project activity by PersistentClimate India Private Limited with local partners in Uganda, increase access for households and communities to improved cookstoves by disseminating Improved Cook Stoves featuring high thermal efficiency and low greenhouse gas emissions. These ICS are distributed across the households and communities in Uganda, replacing previously used traditional devices, typically featuring low fuel efficiency and high rates of emissions among not only greenhouse gas emissions but also particulate matter and other emissions detrimental to health and posing risks of fire. The implementation of this Project resulted in the reduction of firewood/wood fuel (charcoal) consumption & associated greenhouse gas emissions in a sustainable manner. Project objectives include reduction of greenhouse gases, conservation of forests and woodlands as well as improved health conditions of ICS users due to improved indoor air quality along with drudgery reduction in everyday cooking.

Under this grouped project, 58,793 is the total Number of Distributed ICS under this project instance. 13,027 Jikokoa, 549 Kuniokoa and 45,217 Masupa are the total Number of Distributed ICS under this project instance.

The total GHG emission reductions or removals generated in this monitoring period:

The project results in a total emission reduction of 453,602 tCO₂e over the monitoring period of 01-August-2022 to 31- December-2023 (both days included).

3.2 Deviations

3.2.1 Methodology Deviations

Following deviation requested and was accepted in the last verification.

The deviation has been sought with respect to the approach chosen for determining the efficiency of the baseline charcoal cookstoves. There are two options (default value or surveys prior to implementation of project activity) to determine the efficiency of baseline stoves as per the applied methodology. PP has chosen the 'surveys' option to determine the efficiency of baseline stoves. However, for determining the charcoal baseline efficiency, the survey was not possible to conduct before the project implementation due to the peak COVID-19 scenario existing prior to the implementation, hence PP undertook the baseline survey along-with the first monitoring survey. During the surveys, it was found that the HHs were using the traditional charcoal stoves in baseline without the chimney or grate. The same also confirmed during through the site visit.

The efficiency of baseline stove was sourced from the research paper “Development of bioenergy technologies in Uganda: A review of progress under section 2.1.1”/32/ as per which “traditional charcoal stoves, on the other hand, are locally made using scrap metal materials such as roofing sheets and oil drums, but do not have insulation lining; therefore, leading to excessive heat loss during operation. The efficiency of these stoves is reported to be less than 10%”. However, PP has conservatively considered the efficiency of 15% for charcoal cookstoves, which is found conservative and hence the deviation was accepted

3.2.2 Project Description Deviations

N/A. This project did not apply any deviations related to Project Description.

3.3 Grouped Projects

The project is a grouped project. No new instance of the project activity added in the current verification.

3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes ☒ No

No, the project did not undergo baseline reassessment during the monitoring period.

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	Bold
Data unit	Tonnes/ year
Description	Annual quantity of woody biomass that would have been used in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices.
Source of data	UN Data for household fuelwood and charcoal consumption
Value applied	4.38 tonnes wood-eq/HH-yr (For Firewood baseline) 6.023 Tonnes/HH (For charcoal baseline)

Justification of choice of data or description of measurement methods and procedures applied

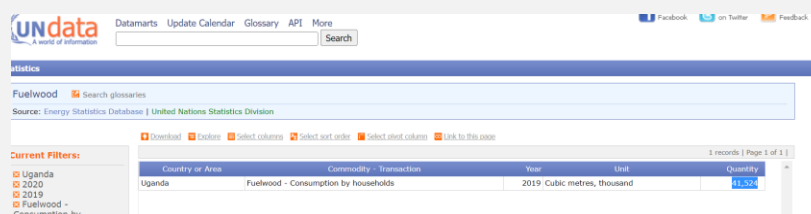
Historical fuel consumption in Uganda by using the UN data⁵ and the analysis is shown below.

In 2019 the household firewood consumption in Uganda as per the UN data is:

$$41524 \times 1000 \text{ Meter}^3 = 41524000 \text{ Meter}^3$$

$$\text{Conversion Factor}^6 = 1.38 \text{ Meter}^3/\text{Tonne}$$

$$\begin{aligned} \text{Total consumption in Tonnes} &= 41524000/1.38^7 \\ &= 30089855.07 \text{ Tonnes} \end{aligned}$$



The screenshot shows the UNdata website interface. The search results for 'Fuelwood' in Uganda for 2019 are displayed. The table shows a single record for 'Fuelwood - Consumption by households' in 2019, with a quantity of 41,524,000 cubic metres, thousand.

Country or Area	Commodity - Transaction	Year	Unit	Quantity
Uganda	Fuelwood - Consumption by households	2019	Cubic metres, thousand	41,524,000

The population of Uganda in 2019 was = 41000000⁸

Family size of Uganda=4.6 (Same source as above)

Population of Uganda using firewood as fuel=77%⁹

The firewood consumption per HHs comes out as= 30089855.07 Tonnes/(41000000/4.6)*0.77 HH

$$= 4.38 \text{ Tonnes/Year}$$

Similarly for Charcoal:

⁵ <https://data.un.org/Data.aspx?d=EDATA&f=cmID%3aCH%3btrID%3a1231>

⁶ (<https://www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/forestry-statistics-2018/sources/timber-2/conversion-factors/>)

⁷

(<https://www.forestresearch.gov.uk/tools-and-resources/statistics/forestry-statistics/forestry-statistics-2018/sources/timber-2/conversion-factors/>)

⁸ https://www.ubos.org/wp-content/uploads/publications/09_2021Uganda-National-Survey-Report-2019-2020.pdf

⁹ <https://sun-connect.org/fact-check-do-7-out-of-10-ugandans-use-firewood-for-cooking/>

¹⁰ <https://mecs.org.uk/wp-content/uploads/2022/06/Ugandas-cooking-energy-sector-a-review.pdf>

	In 2019 the household firewood consumption in Uganda as per the UN data¹¹ is: 1,870,000 MT The population of Uganda in 2019 was = 41000000 (Same source as above) Family size of Uganda=4.6 (Same source as above) Population of Uganda using charcoal as fuel=20.9%¹² The charcoal consumption per HHs comes out as= 1,870,000 Tonnes/(41000000/4.6)*0.209 HH =1.004 Tonnes/HH Charcoal to wood conversion factor: 6 Therefore, the corresponding value for charcoal baseline in terms of wood as: =1.004*6 Tonnes/HH*HH (In terms of charcoal) 6.023 Tonnes/Year (In terms of firewood)
Purpose of data	Baseline Emissions
Comments	The value is fixed ex-ante Where charcoal is used by baseline devices, a default wood to charcoal conversion factor of 6 Kg of firewood per kg of charcoal may be used in line with paragraph 35 of AMS II.G, version 12. The value for the charcoal stoves are calculated in line with the methodology before including the instances in the group project.

Data / Parameter	NCV _{woodfuel}
Data unit	TJ/tonne
Description	Net calorific value of the non-renewable woody biomass that is substituted or reduced
Source of data	Default as per applied approved methodology VMR0006, v1.1

¹¹ <https://data.un.org/Data.aspx?d=EDATA&f=cmID%3aCH%3btrID%3a1231>

¹² <https://sun-connect.org/fact-check-do-7-out-of-10-ugandans-use-firewood-for-cooking/>

Value applied	0.0156
Justification of choice of data or description of measurement methods and procedures applied	Default value as per applied approved methodology
Purpose of Data	Calculation of baseline emissions
Comments	The value is fixed ex-ante

Data / Parameter	EF_{wf,CO_2}
Data unit	tCO ₂ /TJ
Description	CO ₂ emission factor for the use of wood fuel in baseline scenario
Source of data	Default as per applied approved methodology VMR0006, v1.1
Value applied	112
Justification of choice of data or description of measurement methods and procedures applied	Default as per applied approved methodology VMR0006, v1.1
Purpose of Data	Calculation of baseline emissions
Comments	The value is fixed ex-ante

Data / Parameter	$EF_{wf,non\ CO_2}$
Data unit	tCO _{2e} /TJ
Description	The non-CO ₂ emission factor for the use of wood fuel in baseline scenario
Source of data	Default as per applied approved methodology VMR0006, v1.1
Value applied	26.23
Justification of choice of data or description of measurement methods and procedures applied	Default as per applied approved methodology VMR0006, v1.1

Purpose of Data	Calculation of baseline emissions
Comments	The value is fixed ex-ante

Data / Parameter	$f_{NRB,y}$
Data unit	Fraction
Description	Fraction of non-renewable biomass saved by the project activity
Source of data	CDM Tool 30
Value applied:	0.9790
Justification of choice of data or description of measurement methods and procedures applied	This parameter is determined ex-ante by using the CDM tool
Purpose of the data	Calculation of baseline and project emissions
Comments	The report of f_{NRB} will be made available to VVB during the validation.

Data / Parameter	η_{old}
Data unit	Fraction
Description	Efficiency of baseline cookstove
Source of data	Methodological default value
Value applied	0.1 (For firewood stoves) 0.15 ¹³ (For conventional charcoal stoves) (The research paper as linked in footnote 26 states under section 2.1.1, "Traditional charcoal stoves, on the other hand, are locally made using scrap metal materials such as roofing sheets and oil drums, but do not have insulation lining; therefore, leading to excessive heat loss during operation. The efficiency of these stoves is reported to be less than 10%). PP has conservatively considered the efficiency as 15%.
Justification of choice of data or description of	A default value of 0.1 shall be used if baseline device is a three-stone fire using firewood (not charcoal), or a conventional device

¹³ Development of bioenergy technologies in Uganda: A review of progress

measurement methods and procedures applied	with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney. 0.15 has been opted for charcoal stoves.
Purpose of Data	Calculation of baseline emissions
Comments	The value is fixed ex-ante

Data / Parameter	η_P			
Data unit	Fraction			
Description	Efficiency of project stove at the start of project activity			
Source of data	Manufacturer Appointed Third Party			
Value applied	Burn Jikokoa Model	Masupa Model	Kuniokoa Model	For this instance and firewood/charcoal stoves. All tests were undertaken by third parties as per the latest standards allowed by AMS.II.G.
	0.537	0.382	0.424	
Justification of choice of data or description of measurement methods and procedures applied	The parameter has been sourced from the efficiency tested in laboratory. Testing results were submitted to VVB for validation.			
Purpose of Data	Baseline Emissions			
Comments	For charcoal/other firewood models of improved stoves in future instances shall use the manufacturer's efficiency or efficiency tested in lab as per the WBT protocol.			

Data / Parameter	Life span
Data unit	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 specification

Value applied	7 ¹⁴
Justification of choice of data or description of measurement methods and procedures applied	Manufacturer specification as per the methodology.
Purpose of data	Calculation of baseline emission
Comments	For charcoal/other models of firewood stoves in future instances shall use the manufacturer's life time for respective models as mentioned in the PDD.

4.2 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			
Description of measurement methods and procedures to be applied	Measured directly or based on a representative sample. Sampling standard were used for determining the sample size to achieve 95/10 confidence precision according to the latest version of Standard for sampling and surveys for CDM project activities and programme of activities for biennial survey and 90/10 for annual survey.			
Frequency of monitoring/recording	At least once every two years			
Value applied	Number of Stoves Models	Unit	Count Before Discount (Refer the Installation Summary in ER Sheet)	Count after discount (Refer the C16, C 17 & C18 cells in tab "ER Calculation")
	$N_{y,1}$ Masupa	Number	45,217	43,621
	$N_{y,2}$ Burn Jikokoa	Number	13,027	12,567

¹⁴ This is applicable for this instance only. For charcoal/other models of firewood stoves in future instances shall use the manufacturer's life time for respective models.

	<table><tr><td>Ny,3Kuniokoa</td><td>Number</td><td>549</td><td>530</td></tr></table>	Ny,3Kuniokoa	Number	549	530
Ny,3Kuniokoa	Number	549	530		
Monitoring equipment	Monitoring survey				
QA/QC procedures to be applied	The project implementor maintains a distribution record to calculate this parameter.				
Purpose of data	Calculation of baseline emissions				
Calculation method	Proportion of operational stoves obtained from the survey is multiplied by the total commissioned stoves to arrive at this value				
Comments	The number of units is determined at the time of verification for households with complete and unique registration records. Each record represents one ICS. It was observed during the survey that the persons bought the multiple stoves and then resold to others. In all such cases PP has conservatively applied the discount so that each household with more than one stove is count as 1 stove only. The multiple stoves were discounted for the entire population on conservative grounds. Sampling Frame: Project Database (or combined group projects database in case of Group level sampling) as defined by distribution date, appliance type, serial number, and end-user information. The number of stoves still operating will be determined based on representative sampling. The total number of operational stoves is calculated as the fraction of stoves of type i and age a found operational in the sampling survey multiplied by total number of stoves of type i and age a in the project database.				

Data / Parameter	Date of commissioning of batch j
Data unit	Date

Description	To establish the date of commissioning, the Project Participant may opt to group the devices in “batches” and the latest date of commissioning of a device within the batch are used as the date of commissioning for the entire batch.
Source of data	Project database
Description of measurement methods and procedures to be applied	Fixed and recorded at the time of commissioning/distribution of the last project device in the batch
Frequency of monitoring/recording	Fixed and recorded at the time of commissioning/distribution of the last project device in the batch
Value applied	02-january-2021 (The first cookstove distributed under batch 1)
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Not applicable
Purpose of data	Calculation of emission reduction
Calculation method	Not applicable
Comments	--

Data / Parameter	μ_y
Data unit	Fraction
Description	Adjustment to account for any continued use of pre-project devices during the year y
Source of data	Monitoring survey
Description of measurement methods and procedures to be applied	This parameter should be monitored using one of the following methods: If the baseline cookstoves are decommissioned and no longer used, as determined by the monitoring survey its value is 0 and Bold, adjusted is equal to Bold. If both the improved cookstove and baseline cookstoves are used together then surveys were conducted to record the average continued operation of baseline cookstoves in a sample of households. The surveys should be designed to capture the cooking habits and stove usage of households in the region,

	including quantification of use of baseline cookstoves, by formulating questions and/or collecting evidences to determine the frequency of usage of both the improved cookstoves and baseline cookstoves.			
Frequency of monitoring/recording	At least once in 2 years			
Value applied	1-μ _{y,1} Masupa	fraction	0.980	
	1-μ _{y,2} BURN Jikokoa	fraction	1.000	
	1-μ _{y,3} Kuniokoa	fraction	1.000	
Monitoring equipment	Monitoring survey, for ex-ante 0 is assumed and for ex-post the actual value will be monitored and accordingly discount factor will be applied as per the provisions of methodology.			
QA/QC procedures to be applied	A 95 /10 confidence / margin of error shall be achieved for the sampling parameter irrespective of annual / biennial monitoring frequency as per para 22 of Standard: Sampling and surveys for CDM project activities and programmes of activities, Version 09.0. In the case the desired precision is not met, lower bound values shall be used against repeating the survey to determine the operational fraction of stoves.			
Purpose of data	Calculation of baseline emissions			
Calculation method	Not applicable			
Comments	The methodology used for monitoring of continuous use of baseline is in accordance with Data / Parameter table 9 of the §6.1 of the methodology AMS-II.G, version 12. 95 /10 confidence / margin of error is achieved for the sampling parameter as per para 22 of Standard: Sampling and surveys for CDM project activities and programmes of activities, Version 09.0			

Data / Parameter	$\eta_{new,i,j}$
Data unit	Fraction
Description	Efficiency of the device of each type i and batch j implemented as part of the project activity
Source of data	Manufacturer specification or <i>Certification by a national standards body or an appropriate certifying agent recognized by that body</i>
Description of measurement methods	To adopt Equation 5 given in the methodology:

and procedures to be applied	“Efficiency of the improved cookstoves to be estimated using equation 5 of applied approved methodology where loss in efficiency per year is calculated, and therefore this parameter does not need to be monitored” Weighted average value for the efficiency of each ICS model is calculated for the emission reduction calculation.				
Frequency of monitoring/recording	Annual				
Value applied	Depreciated Efficiencies as per VMR0006	Burn Jikokoa Model	Masupa Model	Kuniokoa Model	
	ICS efficiency (ηp)	0.537	0.382	0.424	
	Year	Stove efficiency	Stove efficiency	Stove efficiency	
	1 (applied Efficiencies)	0.505	0.357	0.399	
	2 (applied Efficiencies)	0.500	0.355	0.395	
	3 (applied Efficiencies)	0.495	0.352	0.391	
	ICS model		Weighted average efficiency		
	Jikokoa		49.51%		
	Masupa		35.64%		
	Kuniokoa		39.07%		
Monitoring equipment	Not applicable				
QA/QC procedures to be applied	Not applicable				
Purpose of data	Calculation of baseline emissions				
Calculation method	As per equation 5 of VMR0006, version 1.1 i.e., $\eta_{new,i,j} = \eta_P \times (DF_n)^{y-1} \times 0.94$				
Comments	For charcoal/other firewood models of improved stoves in future instances shall use the manufacturer’s efficiency or efficiency tested in lab as per the WBT protocol.				

The second monitoring period for the project is 01-August-2022 to 31- December-2023 (inclusive of both days)

Due to the large number of ICS installed under the projects it was not economically feasible to monitor each individual ICS unit installed, therefore, a representative sampling was undertaken as part of grouped project Sampling Plan. The Sampling Standard version¹⁵ 09.0 (paragraph 22) mandates application of 95/10 confidence/precision for project instances solely composed of micro-scale CDM units hence the same was applied as a conservative measure despite the methodology taking precedence.

The objective of the sampling was to obtain an unbiased and reliable estimate of the proportion or mean value of the following parameters over the course of the monitoring period, and with 95/10 confidence/precision. The sampling plan consist of monitoring the following parameters as mentioned below:

S. No.	Monitoring Parameter	Description of Monitoring Parameter
1.	$N_{y,i,j}$	Number of project devices of type i and batch j operating during year y for each stove type (wood & charcoal)
2.	μ_y	Adjustment to account for any continued use of pre-project devices during the year y (for each stove type)

The target population is the total ICS population served under the grouped project (and covered under the monitoring report), and the sampling frame consists of aggregated data of end-users of the ICS as recorded in the project Databases.

The sampling was conducted using simple random sampling technique over the sampling frame for each project instance. The ICS in the sampling frame were stratified by ICS model i (woody biomass and charcoal) and batch j (year of installation). The sample size was calculated as per the CDM. The expected parameter values (mean, standard deviation and proportion) have been determined based on project developer's knowledge and experience as per para 12(b) and 12(c) of the Sampling and surveys for CDM project activities and programmes of activities, Version 09.0.:

4.3 Monitoring Plan

Sample Plan:

The monitoring plan designed to monitor the parameters listed in Section above, which are required for calculation of the actual GHG emission reduction achieved by the project activity using ex post sampling survey. The share of operating stoves and the continued use of pre-project devices is determined based on sampling procedures as outlined below. The PP conducted the sampling surveys and is responsible in maintaining database with all operating stoves.

¹⁵ https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20210531160756223/Meth_Stan05.pdf

Physical visits to the end-user's premises were conducted to perform the ex-post sampling survey to monitor the share of operating stoves, the continued use of pre-project devices and the SDG impacts due to the project implementation.

No monitoring for leakage through competitive uses of biomass is required, as the parameter charcoal/wood usage is multiplied by 95% to account for leakage.

As per the Guideline for Sampling and Surveys for CDM Project Activities and Programme of Activities, version 04, the sampling plan is the following:

(a) Sampling Design

Due to the large number of ICS distributed as part of the project activity, it was not economically feasible to monitor each individual ICS unit distributed. Therefore, a representative sampling survey was undertaken as part of a project instance-wide. Sampling Plan (by grouping and sampling across project activities) that is designed in line with the requirements of the "Sampling and surveys for CDM project activities and programme of activities", version 04.

(i) Objective 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. As per CDM Methodology AMS-II.G, 90/10 confidence/precision shall be applied for annual sampling requirement and 95/10 for biennial sampling inspection. As per Standard for Sampling and Surveys for CDM Project Activities and Programme of Activities¹⁶, 90/10 confidence/precision to be adopted for small-scale project and 95/10 for large-scale project. Given that the size of the project is under the category of large projects, hence 95/10 confidence/precision is adopted for all parameters, unless the average annual emission reductions of the project below the threshold:

Monitored Parameter:

Parameter	Description	Parameter type/Frequency
$N_{y,i,j}$	Number of project devices of type i and batch j operating during year y	Proportion/Biennially
$\mu_{y,i,j}$	Adjustment to account for any continued use of pre-pre-project devices during the year y	Proportion/Biennially

(ii) Target Populations:

¹⁶ https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20210531160756223/Meth_Stan05.pdf

- The target population for the proportion of ICS still in operation ($N_{y,i,j}$ and $\mu_{y,i,j}$) of this project are all households in the project database which are using fuel wood in ICS distributed under the project for cooking.
- The target population for pre project appliances ($\mu_{y,i,j}$) is the set of old stoves still in use under the project database.

(iii) Sampling Frame

To ensure the homogeneity of the project instances included for a single sampling plan, two sampling frames are defined. Overall, all project instances will have same group of end users which is from households from rural/semi-urban areas. The projects are implemented in rural/semi-urban areas; thus, it is observed that the geographical locations do not have influence on the parameter of interest. Therefore, all above mentioned parameters are assumed to be highly homogeneous for each ICS model regardless of how the end user group and distribution/installation location is defined.

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

The sample frame refers to all the information sources on the Database. There are two primary mechanisms for data collection: the Registration Process for newly distributed/installed ICS and the Monitoring Survey (which includes a household questionnaire and visual inspection of ICSs) that will be used throughout the lifetime of the ICS. The detailed information collected from Registration Process is used to populate the stoves Database and the Monitoring Survey follows “Sampling and Surveys for CDM Project Activities and Programme of Activities”, version 04.

As explained below (on section “Sampling Method”), to take the different characteristics of different project instances Implemented and ICS models into consideration, Project instances shall be grouped together to create a Primary Sampling Unit, which is homogenous. As per EB 86 Annex 04, Appendix-2, paragraph 1, for the use of a single sampling plan covering a group of projects, provided the homogeneity of population can be demonstrated, or differences are taken into account in the sample size calculation, a 95/10 confidence/precision is applied for biennial sampling.

The first step is to identify the Primary Sampling Units. Primary sampling units are project instances, which have:

1. The same ICS models

That is project with the same ICS model can therefore be grouped together and form a Primary Sampling Unit. In case project has two different ICS models being implemented – this will form two Primary Sampling Units. This is justified by the fact that project might vary in terms of performance and it is important for the PP to collect and monitor accurate data for each stove model.

2. Adjustment to account for any continued use of pre-project devices during the year($\mu_{y,i,j}$)

In line with applied approved methodology AMS-II.G, as installing data logger is not practical and if any use of pre project device can be monitored in a common survey with other monitoring parameters; therefore, a random sub - sample within the common survey can be taken to determine continued use of old cookstoves and its proportional usage by including suitable questionnaire.

There will be two situations 1) project ICS are completely discarded 2) the old stoves used along with project ICS.

Hence in first case it will be simple multiplication of fraction of total number of project ICS displaced by old cookstoves by total number of cookstoves in project, to achieve precise results based on survey result sample size calculation can be repeated.

However, for second case, surveys may be conducted if the use of data loggers to record the continued operation of baseline devices is demonstrated to be not practical, for example when the baseline device is the three-stone fire. The surveys should be designed to capture the cooking habits and stove usage of households in the region, including quantification of use of baseline devices, by formulating questions and/or collecting evidences to determine the frequency of usage of both the project devices and baseline devices. For example, if there were 3 pre-project devices per household and it was determined during the survey that use of one of them continues during the crediting period then a conservative adjustment factor of 0.66 is applied for the relevant monitoring period. Another example would be the case where there was only one pre-project device per household and its use during the project period continues along with the project stove to meet 25% of the cooking needs of the household in which case the adjustment factor will be 0.75. Where a more precise data is available i.e. the thermal capacity of the project and pre-project devices and respective utilization hours, a weighted average adjustment factor may be used.

As mentioned above the either separate sampling can be done for this parameter or can be clubbed with sampling of above parameters, wherein interview question to be included to determine the average fuel wood used by the project device.

(iv) Sampling Method

Representative sampling will be undertaken as part of a cross-instance Sampling Plan that is designed in line with the requirements of the methodology applied and the Standard: Sampling and surveys for CDM project activities and programmes of activities, version 9.0 Sample sizes will be sufficient to ensure that the precision of the sample means/proportions are in accordance with the methodological / standard requirements. In cases where survey results indicate that desired precision is not achieved, the lower bound value of corresponding confidence interval of the parameter value may be used as an alternative to repeating the survey. Alternatively, the survey may be expanded to reach the required confidence/precision. The sampling methodology will be in accordance with the representative sampling methods provided by the methodology AMS-II.G. and other CDM sampling guidelines and standards as indicated *along* this section,

with the applicable methodology having precedence. The Standard (paragraph 22) mandates application of 95/10 confidence/precision for CPAs solely composed of micro-scale CDM units hence the same shall be applied as a conservative measure despite the methodology taking precedence.

(v) Sampling Methodology

For the estimation of the proportion or mean value of the parameters investigated, the minimum sample size for each sample frame has to achieve the 95/10 confidence/precision. for biennial sampling.

Sampling Objective – The sampling objective for each parameter is to determine, via sampling survey / test, a statistically significant parameter value for the emission reduction calculations. These parameters are as listed in monitoring section above. Field Measurement Objective and data to be collected – As listed in monitoring section. Target population and sampling frame – The target population is the total population served under the PoA, and the sampling frame consists of aggregated data of end-users of the ICS as recorded in the CPA Databases. The sampling frame will be kept for 2 years following the crediting period or the last issuance of the VERs of the project activity. Sample method – Sampling will be conducted using stratified random sampling techniques over the sampling frame, and detailed calculations are provided below as per CDM guidelines “Sampling and surveys for CDM project activities and programmes of activities” the ICS in the sampling frame shall be stratified by ICS model type i and batch j. Stratified Random Sampling will be used to select samples from the Project Database for monitoring parameters. Optionally, other sampling approaches may be used in accordance with Standard “Sampling and surveys for CDM project activities and programmes of activities” and Guideline for Sampling and Surveys for CDM Project Activities and Programme of Activities, when sampling techniques or statistical analysis necessitates it.

The sample size is determined using the following formula:

$$n \geq \frac{z^2 * N * V}{(N-1) * precision^2 + z^2 * V}$$

Where,

n = number of ICS to be sampled

N = Total number of ICS in the population

Z = Constant referring to level of confidence (1.96 for 95 % confidence)

Precision = Required precision (e.g. 10% = 0.1)

For Proportion based parameters

$$V = \frac{SD^2}{p^2} \text{ Where:}$$

$$SD^2 = \frac{\sum_{i=1}^k g_i * p_i * (1 - p_i)}{N}$$

$$\bar{p} = \frac{\sum_{i=1}^k g_i * p_i}{N}$$

Where,

g_i = weight of strata i in the population

p_i = expected proportion of strata i in the population

k = total number of strata in the population

For Mean based parameters

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

Where

$$SD^2 = \frac{\sum_{i=1}^k g_i * SD_i^2}{N}$$

$$Mean = \frac{\sum_{i=1}^k g_i * m_i}{N}$$

Where

SD_i = expected standard deviation of strata i in the population

m_i = expected mean of strata i in the population

To ensure a random stratified sample selection, random number generators is applied. Each ICS in the target population is uniquely identified by its Serial ID number. Each ICS are 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 stratified sampling frame. Applying the random number generators, the ICS are then be randomly chosen from the defined population up to the required sample size as calculated by the CME. During sampling, there may be non-response from the target population. Over-sampling are used to avoid non-response, however, sampling may be cease once required confidence/precision is met. In the case of parameters monitored for the first time the expected variation for that measure in the sample may be based on results from similar studies, pilot studies, or from the project planner's own knowledge / experience of the data (as per para 12 of Standard).

Sampling Constants	Values
Monitoring period start	01-August-2022
Monitoring period end	31-December-2023

Level of Sampling	Across Group Project
Confidence (%) (90 or 95)	95%
Margin of Error (%)	10%
Z value	1.960

Monitoring Parameter	Stove Efficiency $\eta_{new,i,j}$				
Sampling Frame requirement as per PD	Given stove model and vintage population				
Sampling approach	Stratified random sampling across stove model and vintage				
Sampling Population (i)	Model	Sampling frame size	Expected Mean Efficiency (%) (Source: Initial Test Reports by certified labs)	Expected SD	Calculated Sample Size
Charcol Stove	Burn Jikokoa	13027	Not used	Not used	Not used
Charcol Stove	Masupa	45217	Not used	Not used	Not used
Wood Stove	Kuniokoa	549	Not used	Not used	Not used
Sample size determination					
Estimated efficiency (mean)					0.00
Estimated Standard Deviation of efficiency (SD)					Not used
$V_{mean} = (SD/mean)^2$					Not used
Minimum Sample Size required (efficiency)					Not used
tDistribution sample size adjustment				Iteration 1	Not used
				Iteration 2	Not used
				Iteration 3	Not used
				Iteration 4	Not used
				Iteration 5	Not used
				Iteration 6	Not used
Monitoring results					
Sampling Population (i)	Model	Sampling frame size	Monitored Sample Size	Monitored Efficiency (%)	Monitored Standard Deviation
Charcoal Stove	Burn Jikokoa	13027	Not used	Not used	Not used
Charcoal Stove	Masupa	45217	Not used	Not used	Not used
Wood stove	Kuniokoa	549	Not used	Not used	Not used
Reliability Check					
Samples Monitored					0
Mean Efficiency					Not used
Standard error of mean					Not used
Relative precision (Margin of error) (%)					Not used
Result					Use Lower Bound Value
Lower Bound confidence value					Not applicable

Monitoring parameter(s)			Stove Operating Fraction for determination of $N_{y,i,j}$		
Sampling frame(s)			Given stove model and vintage population		
Sampling approach			Stratified random sampling across stove model and vintage		
Sampling Population (i)	Model		Sampling frame size	Expected operational proportion (SoF)	Calculated Sample Size (n)
Charcoal Stove	Burn Jikokoa		13027	0.95	7
charcoal Stove	Masupa		45217	0.95	24
wood Stove	Kuniokoa		549	0.95	1
Sample size determination					
Estimated SOF (p)					0.95
Estimated Standard Deviation of SOF (SD)					0.218
$V_{SOF} = (SD/p)^2$					0.053
Sample Size required (SOF)					30
Monitoring results					
Sampling Population (Batch)	Model	Sampling frame size	Monitored Sample Size ($n_{i,j,total}$)	Operational Sample ($n_{i,j,operational}$)	Monitored Operating Fraction ($n_{i,j,operationaol}/n_{i,j,total}$)
Charcoal Stove	Burn Jikokao	13027	32	32	1.00
charcoal Stove	Masupa	45217	36	36	1.00
wood Stove	Kuniokoa	549	14	14	1.00
Reliability Check					
Samples Monitored				82	
SoF Measured				1.00	
Standard Error of SoF				0.0%	
Relative precision (Margin of error)				0.0%	
Result				Ok, reliability level met	
Lower Bound confidence value				Not applicable	
Monitoring parameter(s)		Utilization of Project stoves - μ_y			
Sampling frame(s)		Given stove model population			
Sampling approach		Stratified random sampling across stove models			
Sampling Population (i)		Stove population	Expected value	Calculated Sample Size (n)	

Charcoal Stove	Burn Jikokoa	13027	0.98	4
charcoal Stove	Masupa	45217	0.95	14
Wood stove	Kuniokoa	549	0.95	1
Estimated results based sample size determination				
Estimated utilization (p)				0.96
$V_{Utilization} = p(1-p)/p^2$				0.05
Minimum Sample Size required (days of utilization)				18
Monitoring results				
Sampling Population		Sampling frame size	Monitored Sample Size	Monitored Utilization
Charcoal Stove	Burn Jikokoa	13027	32	1.00
Charcoal Stove	Masupa	45217	36	0.98
wood Stove	Kuniokoa	549	14	1.00
Reliability Check				
Samples Monitored				82
Utilization Measured				0.98
Standard Error of Utilization				1.80%
Relative precision (Margin of error)				3.59%
Result				Ok, reliability level met
Lower Bound confidence value				Not applicable

Lower Bound 81.996
Upper Bound 82.004

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

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 reduction.

$$ER_y = \sum_i \sum_j ER_{y,i,j}$$

Equation(1)

Where:

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

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

Equation (2)

Where:

- $B_{y,savings,i,j}$ = Quantity of woody biomass that is saved in tonnes per improved cookstove of type i and batch j during year y
- $f_{NRB,y}$ = Fraction of woody biomass that can be established as non-renewable biomass (f_{NRB})
- $NCV_{wood\ fuel}$ = Net calorific value of the non-renewable woody biomass that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/tonne)¹⁷

¹⁷ 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 1 Introduction

EF_{wf,CO_2}	=	CO ₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 tCO ₂ /TJ) ¹⁸
$EF_{wf,non\ CO_2}$	=	Non-CO ₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 26.23 tCO ₂ /TJ) ¹⁹
$N_{y,i,j}$	=	Number of improved cookstoves of type i and batch j operating during year y
0.95	=	Discount factor to account for leakage

To calculate $B_{y,savings}$, we use Option 1 of the applied methodology²⁰

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

Where:

B_{old}	Quantity of wood fuel used in the absence of the project activity in tonnes
η_{old}	A default value of 0.10 may be optionally used if the replaced system is a three stone fire, or a conventional system with no improved combustion air supply or flue gas ventilation system, i.e., without a grate or a chimney.
$\eta_{new,i,j}$	Efficiency of the system being deployed as part of the project activity (fraction), as determined using the Water Boiling Test (WBT) protocol.

As some of the project households continue to use baseline cookstoves along with improved cookstoves, B_{old} has been adjusted ex-post based on the percentage of project households found to continue such practice according to the Equation 6 of applied methodology as follows:

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

Where:

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

Calculation of f_{nrb} . Has been undertaken by using the CDM tool 30, the detailed calculation and

¹⁸ 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion

¹⁹ 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion

²⁰ Equation 3 of methodology VMR 0006

was furnished to VVB. f_{nrB} value is 97.90%

5.2 Project Emissions

As per the section 8.2 of the applied methodology VMR0006²¹ v1.1, methodology does not account for project emissions separately, but instead quantifies net emission reductions achieved by the project.

5.3 Leakage Emissions

As per the section 8.3 of the applied methodology VMR0006²² v1.1 Leakage is already accounted in calculation of emission reduction by adjusting with default value of 0.95.

5.4 GHG Emission Reductions and Carbon Dioxide 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 reduction.

$$ER_y = \sum_i \sum_j ER_{y,i,j}$$

Equation(1)

Where:

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

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

Equation (2)

Where:

- $B_{y,savings,i,j}$ = Quantity of woody biomass that is saved in tonnes per improved cookstove of type i and batch j during year y

²¹ <https://verra.org/wp-content/uploads/imported/methodologies/VMR0006-Methodology-for-Installation-of-High-Efficiency-Firewood-Cookstoves-v1.1.pdf>

²² <https://verra.org/wp-content/uploads/imported/methodologies/VMR0006-Methodology-for-Installation-of-High-Efficiency-Firewood-Cookstoves-v1.1.pdf>

$f_{NRB,y}$	=	Fraction of woody biomass that can be established as non-renewable biomass (f_{NRB})
$NCV_{wood\ fuel}$	=	Net calorific value of the non-renewable woody biomass that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/tonne) ²³
EF_{wf,CO_2}	=	CO ₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 tCO ₂ /TJ) ²⁴
$EF_{wf,non\ CO_2}$	=	Non-CO ₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 26.23 tCO ₂ /TJ) ²⁵
$N_{y,i,j}$	=	Number of improved cookstoves of type i and batch j operating during year y
0.95	=	Discount factor to account for leakage

To calculate $B_{y,savings}$, we use Option 1 of the applied methodology²⁶

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

Where:

B_{old}	Quantity of wood fuel used in the absence of the project activity in tonnes
η_{old}	A default value of 0.10 may be optionally used if the replaced system is a three stone fire, or a conventional system with no improved combustion air supply or flue gas ventilation system, i.e., without a grate or a chimney.
$\eta_{new,i,j}$	Efficiency of the system being deployed as part of the project activity (fraction), as determined using the Water Boiling Test (WBT) protocol.

Efficiency of the improved cookstoves to be estimated using equation 5 of applied approved methodology where loss in efficiency per year is calculated:

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

As some of the project households continue to use baseline cookstoves along with improved

²³ 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 1 Introduction

²⁴ 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion

²⁵ 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion

²⁶ Equation 3 of methodology VMR 0006

cookstoves, B_{old} has been adjusted ex-post based on the percentage of project households found to continue such practice according to the Equation 6 of applied methodology as follows:

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

Where:

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

Calculation of fnrb. Has been undertaken by using the CDM tool 30, the detailed calculation and was furnished to VVB. fnrb value is 97.90%.

Vintage period	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
2022 (01-August-2022 to 31-December-2022)	133,979	-	-	133,979
202301-Jan-2022 to 31-December-2023	319,623	-	-	319,623
Total	453,602	-	-	453,602

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
2022 (01-August-2022 to 31-December-2022)	152,895	133,979	13.19%	The project distributed more than one stove model. Consequently, the weighted average thermal efficiency of the stoves was used for the ER calculation. And the change in the number of ICSs distributed

				as mentioned in the Joint VCS PD & MR
(2023) 01-August- 2022 to 31- December- 2023	363,168	319,623	12.75%	The project distributed more than one stove model. Consequently, the weighted average thermal efficiency of the stoves was used for the ER calculation. And the change in the number of ICSs distributed as mentioned in the Joint VCS PD & MR
Total	516,063	453,602	12.88%	The project distributed more than one stove model. Consequently, the weighted average thermal efficiency of the stoves was used for the ER calculation. And the change in the number of ICSs distributed as mentioned in the Joint VCS PD & MR

APPENDIX 1: COMMERCIALLY SENSITIVE INFORMATION

No commercially sensitive information has been included in the monitoring report to be excluded in the public version.

APPENDIX 2: MONITORING SURVEY FORM



PersistentClimate India Pvt. Ltd.

Monitoring Survey Form for VCS 3045 in Uganda

1. Survey Basic Information

Survey Date	
Name of Surveyor	
Mode of Survey	1) Physical Visit 2) Phone Call
What is the Project Stove type?	
Serial Number of the Stove	

2. Respondent's Basic Information

Respondent Name		
Respondent's Phone Number		
Address	Parish	
	Village	
	District	
	State/Location	

3. Project Stove Kitchen and Usage Survey

Is Respondent primary cook? 1 = Yes, 2 = No	
If allowed, Photograph of ICS/primary cook in the kitchen with the stove can be taken	
Purchase Date	
Is Project ICS Operational? 1 = Yes, 2 = No	
If No, then from when it has stopped working	
Reason for discontinuing of stove in case of not use	
If Yes, Check if the stove is warm to touch	
If Yes, Check if ashes are present in stove	
Do you use this stove for commercial purposes? 1= Yes, 2 = No	
Source of cooking fuel in project technology (Wood / Charcoal)	
Do you use any other stove apart from Project ICS for cooking? 1 = Yes, 2 = No	
If yes, what is the stove type?	1. Three Stone 2. Inefficient Stove 3. ICS other than Project ICS

Fuel consumption in other stove apart from Project ICS (Wood or Charcoal)	
Do you use any other stove apart from Traditional Stove / Project ICS? (Yes / No)	
Ny (Number of ICS Purchased)	
Number of Weekly meals on Traditional / Baseline Stove	
Number of Weekly meals on Project Stove	

4. Sustainable Development Indicators

Time spent in fuel collection per week before Project ICS Purchase (Hrs)	
Time spent in fuel collection per week after Project ICS Purchase (Hrs)	
Time saved for collecting fuel after purchasing Project ICS	
Smoke Levels	1. Increased 2. Decreased
By how much percent?	
Incidence of Coughing	1. Increased 2. Decreased
By how much percent?	
Incidence of Difficulty in Breathing	1. Increased 2. Decreased
By how much percent?	
Incidence of Itchy Eyes	1. Increased 2. Decreased
By how much percent?	
Has consumption of fuels changed since purchasing the improved stove? 1= Yes, 2 = No, 3 = Not Sure	
(If increased) Why has the fuel consumption increased?	
(If the fuel consumption has decreased), How much money is being saved each month after using the ICS?	
How do you use your financial savings, mentioned above?	

5. Project Information

Is this project registered with any other GHG scheme,	
If Yes, please write down the details in this section	
Have you been visited earlier by anybody except PersistentClimate/Ezylife representative for any surveys?	
Have you signed the end user agreement to cede rights of carbon transfer to PersistentClimate/Ezylife? Yes / No	