



**Verified Carbon
Standard**

GROUPED PROJECTS FOR IMPROVED COOKSTOVE FOR CLIMATE AND COMMUNITY ACTION

Document Prepared by:

Sustainability Investment Promotion and Development

Joint Stock Company

(SIPCO)

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Prepared by	Sustainability Investment Promotion and Development Joint Stock Company (SIPCO)

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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The intention of the grouped project activity involves the installation of energy efficient Improved Cooking Stove (ICS) in the households (hereafter “users”) of Viet Nam for cooking households. For this reason, this proposed project activity aims at reducing the woodfuel consumption of traditional stove users by distributing ICS to households. By reducing the consumption of woodfuel, it can contribute to improving public health problems. Furthermore, this proposed project can contribute to Viet Nam's climate change respond and sustainable development.

The project activity targets households with no previous ICS access. The geographical boundary is in Viet Nam. ICSs are distributed free of cost to users. Sustainability Investment Promotion and Development Joint Stock Company (SIPCO) financed the implementation of the project in full.

The Project activity promotes the dissemination of energy efficient ICS. This in turn reduce deforestation and degradation of forests in Viet Nam through participation of the people in adopting energy efficient stoves. This also contributes to improvement in quality of lives of the people from Viet Nam through reduction of drudgery, time and money spent on fuel wood collection and through improvement of indoor air pollution. Globally, the project contributes by reducing emission of GHG into the atmosphere.

The scenario existing prior to the implementation of the project is the actual baseline scenario which is equal to the existing common practice by the households i.e. in absence of the project activity the equivalent amount of thermal energy generated using firewood in three stone open fires to meet the cooking energy demand.

The improved cookstoves of TK90 covered under the project has been manufactured by Viet Charcoal Production Company Limited. The equipment lifetime is 10 years. The credits shall be claimed only till the end of the operational life of the project devices.

All the project instances to be included in this grouped project will be from within Viet Nam only. Currently, there are 15 project instances under the grouped project¹. The first ICS was distributed on 01-Nov-2021. The first monitoring period is from 01-Nov-2021 to 30-Jun-2023. The second monitoring period is from 01-Jul-2023 to 29-Feb-2024. Till the end of second monitoring period, a total of 216,893 ICSs was reported installed under the project. Detail below:

¹ The detail of the 15 project instances is mentioned in the section 3.1

Table 1: Distribution schedule

Month of installation	Number of ICSs
11/2021	1,558
12/2021	27,081
01/2022	34,284
02/2022	38,382
03/2022	30,339
04/2022	33,646
05/2022	18,707
06/2022	32,896
Total	216,893

The total GHG emission reductions generated in the second monitoring from 01-Jul-2023 to 29-Feb-2024 is 218,129 tCO₂e GHG emission reductions.

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Validation	26-Aug-2021 (the date of remote audit for validation)	VCS	Carbon Check (India) Private Ltd.	
1 st Verification	01-Nov-2021 – 30-Jun-2023	VCS	EPIC Sustainability Services Pvt. Ltd	1.66
2 nd Verification	01-Jul-2023 – 29-Feb-2024	VCS	Ecolance Private Limited	0.67
				2.33

1.3 Sectoral Scope and Project Type

Sectoral scope ²	03 – Energy Demand
Project activity type	Type II – Energy efficiency improvement project

1.4 Project Proponent

Organization name	Sustainability Investment Promotion and Development Joint Stock Company. (SIPCO)
Contact person	Mr. Hoang Anh Dung
Title	Chairman
Address	5th Floor, Sunrise Building, No.25B3, 57 Lang Ha Street, Ba Dinh District, Hanoi, Viet Nam
Telephone	+84 243 519 0955
Email	dung.hoang@carbonvietnam.com

1.5 Other Entities Involved in the Project

Not applicable

1.6 Project Start Date

Project start date	01-Nov-2021
Justification	The project start date of a non-AFOLU project is the date on which the project began generating GHG emission reductions or removals. The project activity is a non-AFOLU project and first cookstove under the project has been operating from 01-Nov-2021. Thus, the project start date is 01-Nov-2021.

1.7 Project Crediting Period

Crediting period	☐ Seven years, twice renewable ☒ Ten years, fixed
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² 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>

	☐ 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	01 Nov 2021 to 31 Oct 2031

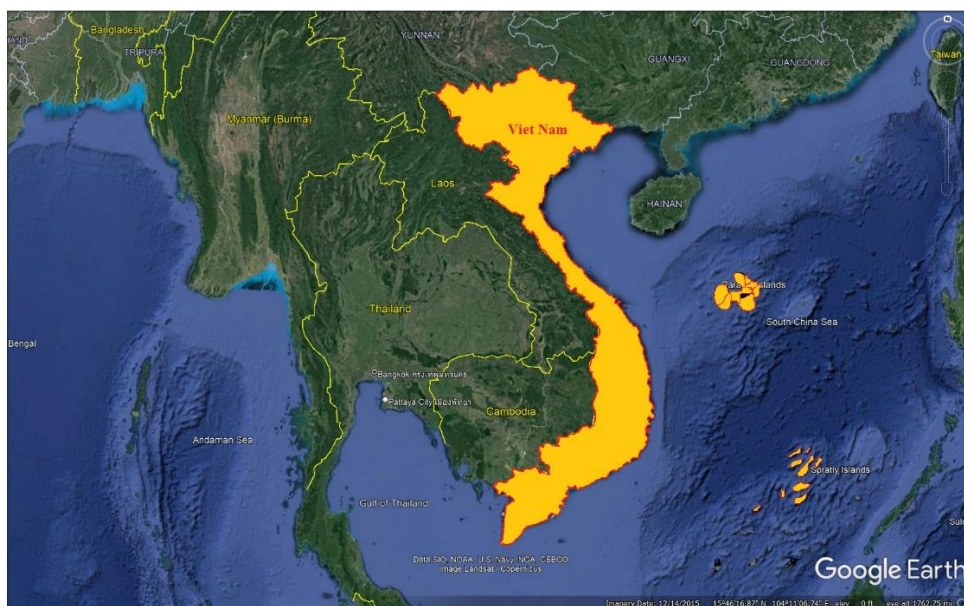
1.8 Project Location

The grouped project was be hosted by Viet Nam. The grouped project covers 09 provinces of Viet Nam bounded between.

Latitudes: 14.315425 N

Longitudes: 108.339537 E

The details of coordinates are being submitted separately as KML file.



Map 1: Map of grouped project

Detail geographic information of the project activity instance is below:

Project activity Instance	Province	Coordinate
PA 001	Tuyen Quang	22.1727 ° N, 105.3131 ° E https://www.google.com/maps/place/Tuy%C3%AAn+Quang,+Vi%E1%BB%87t+Nam/@22.0969536,104.9422137,10z/data=!3m1!4b1!4m6!3m5!1s0x3134adfba5491e

		e1:0x7f5401719284787f!8m2!3d22.1726708!4d105.3131185!16zL20vMDdjZHMx?hl=vi-VN
PA 002	Dien Bien	21.8042° N, 103.1077° E
PA 003		https://www.google.com/maps/place/%C4%90i%E1%BB%87n+Bi%C3%AAAn,+Vi%E1%BB%87t+Nam/@21.7191452,102.3094314,9z/data=!3m1!4b1!4m6!3m5!1s0x312d1f0ee0d1fbf3:0x48718c8562df0ef4!8m2!3d21.8042309!4d103.1076525!16zL20vMDJnajiR?hl=vi-VN
PA 004	Lai Chau	22.3687° N, 103.3119° E
PA 005		https://www.google.com/maps/place/Lai+Ch%C3%A2u,+Vi%E1%BB%87t+Nam/@22.2482639,102.8718826,10z/data=!3m1!4b1!4m6!3m5!1s0x312d322c39d1b451:0xe229916091483c2e!8m2!3d22.3686613!4d103.3119085!16zL20vMDJ3aDIs?hl=vi-VN
PA 006	Lao Cai	22.3381° N, 104.1487° E
PA 007		https://www.google.com/maps/place/L%C3%A0+Cai,+Vi%E1%BB%87t+Nam/@21.2083468,103.1400565,7z/data=!4m6!3m5!1s0x36cd3b8cbf4c0e07:0x21a2b6b9fb469068!8m2!3d22.3380865!4d104.1487055!16zL20vMDIOczE3?hl=vi-VN
PA 008	Quang Ninh	21.0064° N, 107.2925° E
		https://www.google.com/maps/place/Qu%E1%BA%A3ng+Ninh,+Vi%E1%BB%87t+Nam/@21.1506388,106.992521,10z/data=!3m1!4b1!4m6!3m5!1s0x314b01d79a78852f:0xed0779f4f0a5866a!8m2!3d21.006382!4d107.2925144!16zL20vMDZnX3M5?hl=vi-VN
PA 009	Bac Ninh	21.1214° N, 106.1111° E
PA 010		https://www.google.com/maps/place/B%E1%BA%AFc+Ninh,+Vi%E1%BB%87t+Nam/@21.3386452,105.8196901,10z/data=!4m6!3m5!1s0x31350a5d26af7a51:0xe55920c0c6558f70!8m2!3d21.121444!4d106.1110501!16zL20vMDNxNmZ3?hl=vi-VN
PA 011	Nam Dinh	20.2792° N, 106.2051° E
		https://www.google.com/maps/place/Nam+%C4%90%E1%BB%8Bnh,+Vi%E1%BB%87t+Nam/@19.7105244,107.5739664,8z/data=!4m6!3m5!1s0x31360c2151521bdf:0xc8eba2bffe25df62!8m2!3d20.2791804!4d106.2051484!16zL20vMDdtMWRq?hl=vi-VN

PA 012	Lang Son	21.8564° N, 106.6291° E https://www.google.com/maps/place/L%E1%BA%A1ng+S%C6%A1n,+Vi%E1%BB%87t+Nam/@21.8928274,106.4485828,10z/data=!3m1!4b1!4m6!3m5!1s0x36b5543eb745256f:0xfa3d34da85826e5a!8m2!3d21.8563705!4d106.6291304!16zL20vMDZuMnhx?hl=vi-VN
PA 013	Ha Giang	22.7662° N, 104.9389° E https://www.google.com/maps/place/H%C3%A0+Giang,+Vi%E1%BB%87t+Nam/@22.7788949,104.6736905,10z/data=!3m1!4b1!4m6!3m5!1s0x36cc79caead371b1:0x834878b09acb80a8!8m2!3d22.7662056!4d104.938853!16zL20vMDIObjdj?hl=vi-VN
PA 014		
PA 015		

1.9 Title and Reference of Methodology

Type (methodology, tool or module).	Reference ID, if applicable	Title	Version
Methodology	AMS II.G	Energy efficiency measures in thermal applications of non-renewable biomass	12.0
Methodology	AMS-I.E	Switch from non-renewable biomass for thermal applications by the user	12.0
CDM Sampling Standard	N/A	Sampling and surveys for CDM project activities and programme of activities	09.0
CDM Sampling Guideline	N/A	Sampling and surveys of CDM project activities and programmes of activities	04.0
Tool	01	Tool for the demonstration and assessment of additionality	07.0
Tool	21	Demonstration of additionality of small-scale project activities	13.1
Tool	30	Calculation of the fraction of non-renewable biomass	03.0

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

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

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 Verified Carbon Standard project ID 2548 for the greenhouse gas emission reductions or removals associated with TK90 cookstove, manufactured by Viet Charcoal Production Company Limited in Di Su Commune, My Hao District, Hung Yen Province, Vietnam, distributed by Sustainability Investment Promotion and Development Joint Stock Company (SIPCO) whose emissions footprint is changed by the project activities”.

☒ Yes

☐ No

Detail in Appendix 2 in this report.

1.12 Sustainable Development Contributions

The project activity helps in achieving following co-benefits, which contribute in sustainable development in host country.

a) Environment well-being:

- The project activity contributes to the reduction in GHG emission due to reduction in use of non-renewable biomass and it can ensure natural recovery of forests and/or reforestation.
- The project activity leads to reduction in indoor air pollutants from wood smoke and avoid smoke related health disorders.
- The reduction in non-renewable biomass consumption for cooking through efficient use leads to improved ecological balance.
- The project activity supports fire prevention in the household kitchen.

b) Socio and Economic Benefits:

- Implementation of the project activity results in employment opportunities for people involved with installation, maintenance and distribution of these household biomass based cookers.
- The project activity improves the status of living of people in households cooking since the community level implementation of units of these kinds can be carried out at considerably lower costs. There be less dependence on firewood and its expenses and time associated with firewood buying and collection.
- Business development component of the project activity has resulted in the enhancement of capacity development and technical knowhow for moderately educated people in the community through workshops, seminars and training programs.
- The project alleviates the work burden of women and children as they have to spend less time to collect firewood for cooking.
- Community health issues such as chronic lung diseases, acute respiratory infections, cataracts, blindness, and adverse effects on pregnancy are decreased due to improvement of indoor air quality.

c) Technological benefit

The introduction of locally manufactured technology with improved energy efficiency helps in technological self-reliance in the area.

The project aligns with and contribute to sustainable development objectives outlined in Table 1 below.

Table 1: Sustainable Development Contributions

Row number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime
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)	1.4	1.4.1. Proportion of population living in households with access to basic services	Implemented activities to increase	Provide 216,893 families in this monitoring period with greater access to basic services in the form of clean cooking technology	The project will allow 216,893 households access to clean cooking technology over the lifetime of the project.

2)	3.9	3.9.1: Mortality rate attributed to household and ambient air pollution	Implemented activities to decrease	Reduce Household Air Pollution (HAP) due to cooking by using 216,893 improved cookstove in these households.	The project will lead to reduction in Household Air Pollution (HAP) thereby resulting in improved health conditions of end users, especially women and children who regularly cook in the kitchen
3)	5.4	5.4.1: Project specific indicator: Proportion of time spent on unpaid domestic and care work, by sex, age and location	Implemented activities to decrease	Under the project scenario, women see a massive reduction in both the amount of fuelwood required for cook meal, and the amount of time taken to cook meal. They would be able to save 1 to 2 hours daily. They would also have time to engage in other employment opportunities	Under the project scenario, women will see a massive reduction in both the amount of fuelwood required for cooking, and the amount of time taken to cook. They would be able to save 1-2 hours daily. They would also have time to engage in other employment opportunities.
4)	7.1	7.1.2. Proportion of population with primary reliance on clean fuels and technology	Implemented activities to increase	With the installation of 216,893 ICSs in grouped project to replace traditional stove, the project improve energy efficiency in beneficiary homes and greater access to basic services in the form of clean cooking technology	The project will allow 216,893 households to gain access to clean cooking technology over the lifetime of the project
5)	8.3	8.3.1. Proportion of informal employment in total employment, by sector and sex	Implemented activities to increase	The project generates around 30 employment opportunities for assembling of ICSs, distribution of ICSs and post-sale operation & Maintenance of ICSs	The project is expected to employ a total of 30 people over the lifetime of the project

6)	13.0	13.2. Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	Reduce the total fuelwood usage in the project area to generate 218,129tCO2e for this monitoring of emission reductions	The project is expected to achieve GHG emission reduction about 2 million over the lifetime of 10 years of the project
7)	15.0	15.1.1. Forest area as a proportion of total land area	Implemented activities to increase	By replacing inefficient open cooking fires with 216,893 stoves in this monitoring period and performing energy efficiency improvements in improved cookstoves, the project activity save woody biomass.	By distributing 216,893 improved cookstove instead of traditional cookstove, the project help reduction in demand for firewood.

1.13 Commercially Sensitive Information

The project activity involves distribution of improved cookstove to individual household. There is no commercially sensitive information so this section is not applicable.

2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

Stakeholder Identification

The stakeholders have been identified as individuals or groups that are potentially affected by the project and within each of the following categories: government, international government agencies, non-governmental organizations, religious aid agencies, academic, current, and potential future implementing partners, stove manufactures, carbon sector organizations, partner donors, the media, individuals, and their families.

Stakeholders can be defined by three steps approach as following:

Step 1: The first step is to identify the expected and unforeseen consequences of the project's activities. Once the outcomes are determined, the potential stakeholders affected by these impacts are identified.:

Step 2: Following the holistic perspective on the overall benefits and co-benefits of the project, stakeholder group identification is carried out as each stage of project implementation. The examination for stakeholder identification per different stages are as follows:

- Project Initiation: stakeholders include self-help groups such as Women Union or Youth Group who can assist the project initiator in understanding the project benefits

	and potential impediments, making ingress within the community... • Project Development: At this step, stakeholders include government representatives, community development organisations, investors, NGOs working in defined groups, etc • Project Implementation: End-users, implementing partners, stove manufacturers, training personnel. The PPs has signed contract with Provincial's women Union, this is an agency with all levels from central to local (village, hamlet), they are close the households and can know exactly these households who are using the traditional cookstove for cooking meal and they can select the correct beneficiaries. • Project monitoring (validation and verification): surveyors, database developers, end-users involved in project monitoring. Almost of project stakeholders affected by project activity was identified in the step 2 by SIPCO. Step 3: Select representatives from each stakeholder identified in step 2 as the final step of the identification process. The final list of stakeholder includes end users, representative of Women Union, government authorities, local NGOs and business, local vendor, ICS manufacturers. The full list of identified stakeholders has been provided to the VVB as a supportive document.
Legal or customary tenure/access rights	The project activity involves distribution of ICSs to households and it is not involving any legal or customary tenure/access rights to territories and resources. So, this section is not applicable

Stakeholder diversity and changes over time	Each stakeholder is defined as a group composed of individual stakeholders who derive similar income, livelihood, well-being and/or cultural values from the project and whose values are different from those of other groups. There are many stakeholders identified at period of project activity, from starting, development, implementation and monitoring. There is insignificant change in stakeholders' diversity and therefore have no real impact on their opinion during the monitoring period. - ICS user: there has been an unquantifiable improvement in their health, livelihood, wellbeing, and income as per exchange during onsite survey. - Women Union: No change in structure & functionality or any organization values. - Local vender: Various local businesses supply wood in the project area. Project activity helps save wood in cooking so influence consumption of these products and could thus negatively affect vendor livelihoods. - Manufacturer: More jobs for their employee in manufacturing, transportation and maintenance ICSs. - Other governmental authority and NGOs: No change was observed in structure & functionality.
Expected changes in well-being	- The project activity is contributing to the reduction in GHG emission due to reduction in use of non-renewable biomass and it can ensure natural recovery of forests and/or reforestation. - Community health issues such as chronic lung diseases, acute respiratory infections, cataracts, blindness, and adverse effects on pregnancy are decreasing due to improvement of indoor air quality. - The introduction of locally manufactured technology with improved energy efficiency helps in technological self-reliance in the area
Location of stakeholders	All the stakeholders are operating and living in the area of project activity which is in the geographical boundary of Vietnam country.
Location of resources	Have no change in location of resource during the monitoring period.

	- ICS user: they still freely access to local forest around their household to collect wood fuel. - Local vender: They still can supply wood in the project area. - Women Union and local NGOs and government: They have no change in structure & functionality, they are still operating in Vietnam and access to the same resources.
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2.1.2 Stakeholder Consultation and Ongoing Communication

Ongoing consultation	The PP is maintaining ongoing communication with stakeholders through different measures. 1) During the monitoring survey, project has taken the chance to update information to different stakeholders, and collected comments through interviews, surveys, direct observations, group discussions. The PP also conducts and reports the monitoring result from the random sampling of to all stakeholders on annually basis. 2) Staff of SIPCO and Women Union of the villages communicates & collects end-users' comments through regular visits to household at least 1 time per year. 3) Through monitoring survey trip, the field team managers also actively organize and conducts group discussions with different stakeholders The data from these interactions is compiled into annual reports and updated to the Women Union & local governmental authority. Through the ongoing communication process, all the implementation information, such as the results of monitoring, the risks, costs and benefits the project and the plan of site visit from verification body has been updated timely to the stakeholders. In addition, the PP also updates workers on relevant law and applicable regulation (if any) and conduct additional educational services as requested by the beneficiary.
Date(s) of stakeholder consultation	20/03/2024, the date of SIPCO send the report of this monitoring period to Women Union.

Communication of monitored results	The monitored results have been shared with Woman Union & relevant stakeholders through annual reports include the information of 1) The list of households has been selected for survey 2) The summarize of the result of SIPCO's representative sample conduct survey.
Consultation records	All formal consultation are logged in the consultation forms. Forms are be saved for record of correspondence
Stakeholder input	During this ongoing communication, some household hope the manufacture can increase the size of project stove to cook more thing, And the manufacturer has taken note and research the way to design the cookstove accordingly. However, the change of size of project stove is not suitable at this time due to cost issue.

2.1.3 Free, Prior, and Informed Consent

Consent	The project activities take place with the approval of Commune People's Committee in a series of consultation meetings as documented. In addition, ICS is a completely voluntary activity and households in participating villages are free to choose whether they take part or not. Free, prior, and informed consent takes place before installation.
Outcome of FPIC	The project activity involves distribution of improved cookstove to individual households and it has not encroached on land, relocated people. All of information is transparency.

2.1.4 Grievance Redress Procedure

Grievances received	Resolution and outcome
There is no the grievance raised during this monitoring period.	Not Applicable.

The grievance mechanism process could be illustrated as below:



- **Receive Grievance**

The grievance could be received by all means, such as in person/over the phone, via email/website,

- **Record**

All formal grievances is logged in the External Grievance Register and Grievance Lodgment Forms will be saved for record of correspondence.

- **Screen**

The stakeholder contact officer is responsible for assigning a grievance owner to liaise with the external stakeholders and work on a resolution. Grievances are screened depending the level of severity in order to determine who the grievance owner will be and how the grievance is approached.

- **Acknowledge**

A grievance is acknowledged, the grievance owner, within two working days of a grievance being submitted. Communication is made either verbally or in written form.

The acknowledgement of a grievance should include a summary of the grievance, method that is taken to resolve the grievance and an estimated timeframe in which the grievance is resolved. If required, the acknowledgement provides an opportunity to ask for any additional information or to clarify any issues.

- **Investigate**

The grievance owner is responsible for investigating the grievance. The investigation may require the grievance owner to make site visits, consult employees, contact external stakeholders and complete other activities. Records of meetings, discussions and activities all need to be recorded during the investigation. Information gathered during the investigation is analyzed and assist in

determining how the grievance is handled and what steps need to be taken in order to resolve the grievance.

- **Act**

Following the investigation, the grievance owner uses the findings to create an action plan outlining steps to be taken in order to resolve the grievance. The grievance owner is responsible for assigning actions, monitoring actions undertaken and making sure deadlines are adhered to. Once all actions have been completed and the grievance owner feels the grievance has been resolved, they will then formally advise the external stakeholder via their preferred method of contact.

- **Follow up and close out**

The grievance owner make contact with the external stakeholder/s three weeks after the grievance is resolved. When contacting the external stakeholder, the grievance owner will verify that the outcome was satisfied and also gather any feedback on the grievance process.

Minutes of the meeting are recorded and saved.

If required, the grievance owner may need to follow up with the external stakeholder on numerous occasions to confirm all parties are satisfied.

The procedure is accessible to stakeholders for ongoing consultation, but there is no any grievance received in this monitoring period.

2.1.5 Public Comments

There is no comment received during this monitoring period.

2.2 Risks to Stakeholders and the Environment

	Risk identified	Mitigation or preventative measure taken
Risks to stakeholder participation	No risk identified	The project activity involves distribution of improved cookstove to individual household. There is no trade-off or any negative impact to their livelihood, land, food, etc. therefore, no any risk identified to stakeholder participation
Working conditions	No risk identified	Project activities create jobs for local people, help them from unemployed to employed. All of working condition such as working hour, clothes, environment... as

		per Viet Nam's Labor Law. therefore, no any risk identified to working condition
Safety of women and girls	No risk identified	The project activity help reduce the proportion of time rural women spend on unpaid domestic work related to collection of firewood, Therefore, no any risk identified relate to safety of women and girls.
Safety of minority and marginalized groups, including children	No risk identified	The project alleviates the work burden of children, minority and marginalized groups as they have to spend less time to collect firewood for cooking. Therefore, no any risk identified relate to safety of minority and marginalized grouped
Pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials)	No risk identified	The project activity involves distribution of improved cookstove to individual household. The project activity reduce air pollutants from wook smoke and improve the air quality indoor.

2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

Discrimination and sexual harassment	The project participants do not discriminate based on gender and ensure that an equal number of women and members of other underrepresented groups have the opportunity to apply. As part of our commitment to having a diverse and inclusive workplace, we have zero tolerance for harassment and bullying.
Management experience	SIPCO have many year of experiences in implementing similar project activities and engaging communities. We have policies in place to inform management and employees about the avoidance of corruption, code of conduct, and business ethics. These policies are applied by all project staff, including company management to

	ensure that the organization is run in accordance with all legal requirements and is held to the highest standards of operation
Gender equity in labor and work	The project also encourages women in the local communities to take up employment as per their skills, and provide training to all staff regardless of gender. The company as per its human resource policy ensures fair opportunity and equal pay for equal work done to both men and women. Furthermore, the project activity provides more opportunities to women through self-help groups, thus helping in overall women empowerment
Human trafficking, forced labor, and child labor	SIPCO does not tolerate child labor or forced, involuntary or trafficked labor in any form. Victimization at work, such as recurring negative actions directed against individual employees, is not permitted. All employees shall treat one another with respect, dignity and common courtesy.

2.3.2 Human Rights

The contractor, synonymous with implementing partner, enters into an independent contractor agreement with SIPCO. The agreement contains details of SIPCO's and the contractor's compliance according to Viet Nam labor laws. Specific information is provided on anti-terrorism and anti-corruption efforts, including a code of conduct. Per the Core Labour Conventions of the International Labour Organization (ILO), SIPCO respects, and works in tandem with the elimination of all forms of forced or compulsory labour, the effective abolition of child labour, minimum age convention, the right to organize, and the elimination of discrimination in respect of paid positions and occupation

2.3.3 Indigenous Peoples and Cultural Heritage

N/A

The project activity involves distribution of improved cookstove to individual households and it is not involving any indigenous peoples and cultural heritage.

2.3.4 Property Rights

Disputes over rights to territories and resources	Not applicable
Respect for property rights	The project activity involves distribution of improved stove to individual households and it is not involve any property right removal/relocation of property rights holders.

2.3.5 Benefit Sharing

Summary of the benefit sharing plan	Not applicable because the project activity does not have any impacts property right
Benefit sharing during the monitoring period	Not applicable because the project activity does not have any impacts property right.

2.4 Ecosystem Health

Risk identified		Mitigation or preventative measure taken during the monitoring period
Impacts on biodiversity and ecosystems	No risk identified	The implementation of the grouped project does not impose any severe impacts on the ecological system in the surrounding areas. This project activity helps in reducing the consumption of fuel wood by efficient fuel combustion thereby reducing deforestation and reducing indoor air pollution. The use of efficient Cooking Stove technology reduce adverse environmental and social impacts associated with the use of non-renewable biomass. The reduced consumption of the stated baseline fuel has sustainable benefit for all household's traditional cook stoves users included in the project activity. The implementation of the project reduce workloads involved in fuel collection, and by reducing indoor air pollution, reduce the risk of respiratory diseases, especially for women and children. Efficient or improved Cooking stoves also contribute to environment protection by reducing biomass consumption and hence greenhouse gas emissions, mainly CO₂, when the combusted biomass originates from non-renewable stocks. Therefore, it has no impact to ecosystem health, so this section is not applicable
Soil degradation and soil erosion	No risk identified	
Water consumption and stress	No risk identified	
Usage of fertilizers	No risk identified	

2.4.1 Rare, Threatened, and Endangered species

Species or habitat

Not applicable because there is no ecosystem impact were identified during validation

2.4.2. Introduction of species

It is not applicable since project not introduce any species.

2.4.3. Ecosystem conversion

It is not applicable since project do not involve any ecosystem conversion.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project activity aims to distribute ICSs in provinces of Viet Nam and during this monitoring period all 216,193 ICSs under project activity were distributed. All ICSs were transported and gathered in local district's temporary warehouses one week before the start distribution date. From 01 Nov 2021, SIPCO in conjunction with the local partner (Women Union) organized mass distributions in all villages within the district. Women Union has affiliates in every village in all over Viet Nam, they can quickly identify the households who are using traditional cookstove to cook meal daily and they can select the households that meet the project criteria. The representative of households whose names were on the demand registration list which have been predetermined to be eligible to participate in the project were invited to the distribution's points to attend the communication session and receive ICS. All 216,193 ICSs under this grouped project were distributed during more than 8 months from 01 – Nov -2021 to 25 Jun 2022, detail in following:

Table 02: Timeline of project activities (PAs)

Project activity	Steps	Timeline
Grouped project	Registration date	04/03/2022
PA 1	Start date of first crediting period	01/11/2021
	Project start date (the first equipment distributed)	01/11/2021
	Inclusion date	04/03/2022

	Implementation status as on 30/06/2023 (number of ICSs distributed)	1,558 ICSs were distributed on 1st Nov 2021
	Total of ICSs have been distributed as on 30/06/2023	1,558 ICSs
PA 2	Start date of first crediting period	01/11/2021
	Project start date (the first equipment distributed)	06/12/2021
	Inclusion date	07/03/2024
	Implementation status as on 30/06/2023 (number of ICSs distributed)	8,615 ICSs were distributed from 6th to 19th Dec 2021 7,027 ICSs were distributed from 01st to 15th May 2022 4,358 ICSs were distributed from 05th to 21st June 2022
	Total of ICSs have been distributed as on 30/06/2023	20,000 ICSs
PA 3	Start date of first crediting period	01/11/2021
	Project start date (the first equipment distributed)	06/12/2021
	Inclusion date	07/03/2024
	Implementation status as on 30/06/2023 (number of ICSs distributed)	3,180 ICSs were distributed from 6th to 25th Dec 2021 1,571 ICSs were distributed from 11th to 21st June 2022
	Total of ICSs have been distributed as on 30/06/2023	4,751 ICSs
PA 4	Start date of first crediting period	01/11/2021
	Project start date (the first equipment distributed)	06/01//2022
	Inclusion date	07/03/2024
	Implementation status as on 30/06/2023 (number of ICSs distributed)	5,890 ICSs were distributed from 6th to 13th Jan 2022 7,798 ICSs were distributed from 14th to 25th Feb 2022 6,312 ICSs were distributed from 2nd to 6th Mar 2022
	Total of ICSs have been distributed as on 30/06/2023	20,000 ICSs

PA 5	Start date of first crediting period	01/11/2021
	Project start date (the first equipment distributed)	06/01/2022
	Inclusion date	07/03/2024
	Implementation status as on 30/06/2023 (number of ICSs distributed)	1,497 ICSs were distributed from 06th to 09th Jan 2022 1,288 ICSs were distributed from 25th to 26th Feb 2022 7,215 ICSs were distributed from 02nd to 19th Mar 2022
	Total of ICSs have been distributed as on 30/06/2023	10,000 ICSs
PA 6	Start date of first crediting period	01/11/2021
	Project start date (the first equipment distributed)	05/01/2022
	Inclusion date	07/03/2024
	Implementation status as on 30/06/2023 (number of ICSs distributed)	4,466 ICSs were distributed from 05th to 21st Jan 2022 11,534 ICSs were distributed from 15th to 28th Feb 2022 4,000 ICSs were distributed from 14th to 20th Apr 2022
	Total of ICSs have been distributed as on 30/06/2023	20,000 ICS
PA 7	Start date of first crediting period	01/11/2021
	Project start date (the first equipment distributed)	09/01/2022
	Inclusion date	07/03/2024
	Implementation status as on 30/06/2023 (number of ICSs distributed)	4,221 ICSs were distributed from 09th to 21st Jan 2022 5,779 ICSs were distributed from 22nd to 28th April 2022
	Total of ICSs have been distributed as on 30/06/2023	10,000 ICS
PA 8	Start date of first crediting period	01/11/2021
	Project start date (the first equipment distributed)	09/02/2022
	Inclusion date	07/03/2024

	Implementation status as on 30/06/2023 (number of ICSs distributed)	9,162 ICSs were distributed from 09th to 27th Feb 2022 7,312 ICSs were distributed from 2nd to 29th Mar 2022
	Total of ICSs have been distributed as on 30/06/2023	16,474 ICS
PA 09	Start date of first crediting period	01/11/2021
	Project start date (the first equipment distributed)	05/12/2021
	Inclusion date	07/03/2024
	Implementation status as on 30/06/2023 (number of ICSs distributed)	12,386 ICSs were distributed from 05th to 26th Dec 2021 6,110 ICSs were distributed from 16th to 24th Jan 2022 1,504 ICSs were distributed from 14th to 15th June 2022
	Total of ICSs have been distributed as on 30/06/2023	20,000 ICS
PA 10	Start date of first crediting period	01/11/2021
	Project start date (the first equipment distributed)	02/06/2022
	Inclusion date	07/03/2024
	Implementation status as on 30/06/2023 (number of ICSs distributed)	11,463 ICSs were distributed from 02nd to 23rd June 2022
	Total of ICSs have been distributed as on 30/06/2023	11,463 ICS
PA11	Start date of first crediting period	01/11/2021
	Project start date (the first equipment distributed)	17/01/2022
	Inclusion date	07/03/2024
	Implementation status as on 30/06/2023 (number of ICSs distributed)	6,000 ICSs were distributed from 17th to 28th Jan 2022 14,000 ICSs were distributed from 1st to 25th Jun 2022
	Total of ICSs have been distributed as on 30/06/2023	20,000 ICS

PA12	Start date of first crediting period	01/11/2021
	Project start date (the first equipment distributed)	02/05/2022
	Inclusion date	07/03/2024
	Implementation status as on 30/06/2023 (number of ICSs distributed)	11,680 ICSs were distributed from 2nd to 26th May 2022
	Total of ICSs have been distributed as on 30/06/2023	11,680 ICS
PA13	Start date of first crediting period	01/11/2021
	Project start date (the first equipment distributed)	12/12/2021
	Inclusion date	07/03/2024
	Implementation status as on 30/06/2023 (number of ICSs distributed)	300 ICSs were distributed in on 12th Dec 2021 6,100 ICSs were distributed from 03rd to 26th Jan 2022 6,500 ICSs were distributed from 11th to 28th Feb 2022 7,100 ICSs were distributed from 18th to 21st April 2022
	Total of ICSs have been distributed as on 30/06/2023	20,000 ICS
PA14	Start date of first crediting period	01/11/2021
	Project start date (the first equipment distributed)	11/02/2022
	Inclusion date	07/03/2024
	Implementation status as on 30/06/2023 (number of ICSs distributed)	1,900 ICSs were distributed from 11th to 22nd Feb 2022 9,500 ICSs were distributed from 03rd to 16th Mar 2022 8,600 ICSs were distributed from 23rd to 29th April 2022
	Total of ICSs have been distributed as on 30/06/2023	20,000 ICS
PA 15	Start date of first crediting period	01/11/2021
	Project start date (the first equipment distributed)	05/12/2021
	Inclusion date	07/03/2024

	Implementation status as on 30/06/2023 (number of ICSs distributed)	2,600 ICSs were distributed from 05th to 12th Dec 2021 200 ICSs were distributed on 19th Feb 2022 8,167 ICSs were distributed from 06th to 11th April 2022
	Total of ICSs have been distributed as on 30/06/2023	10,967 ICS

3.2 Deviations

3.2.1 Methodology Deviations

There has been a change about the value of fnrb “Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass”. The fnrb is 0.9403 according to the independent report by third Party. This value was approved in registered PD on 04/03/2022. Since the result is quite high so PPs want a conservative approach so the uncertainty deduction for fnrb of 0.26 is applied as per the latest version of methodology VMR 0006 “Energy efficiency and fuel switch measures in thermal applications”. Version 1.2, So, the updated value = $0.9403 * (1 - 0.26) = 0.6958$ is applied for ER calculations and monitoring report from this monitoring period. This value was approved in 1st monitoring report on 07/03/2024 and continue to be applied in subsequent monitoring period.

The deviation reduces the emission reduction; it does not negatively impact on the conservativeness of the quantification of reduction or removals.

3.2.2 Project Description Deviations

In registered PD, B_{old} is fixed ex-ante and it is stated that “the assessments, information and results established in the initial instance may be used in subsequent instances in lieu of conducting fresh assessments”.

However, the statement is not clear enough and not cover all the scenario in the implementation, therefore PP would like to revise to “the assessments, information and results established in the initial instance may be used in subsequent instances in lieu of conducting fresh assessments if the new instance in the same area (province) of the baseline survey. In case, the new instance is in different area, which has no baseline survey yet, the PPs need to conduct the baseline survey to define B_{old} before distribution”.

The deviation does not impact the applicability of the methodology, additionally, or the appropriateness of the baseline scenario, the project remains in conformance with the applied methodology.

The deviation was approved in 1st monitoring report on 07/03/2024 and continue to be applied in subsequent monitoring period.

3.3 Grouped Projects

No new project activity instances are included under this grouped in this monitoring period.

3.4 Baseline Reassessment

Did the project undergo baseline reassessment during the monitoring period?

☐ Yes ☒ No

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	B _{bold,HH}																																	
Data unit	tonnes/household/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	Survey of local usage was conducted for the target consumer group included in each province																																	
Value applied	<table><tr><th>PA</th><th>B_{bold,HH}</th></tr><tr><td>PA 001</td><td>3.102</td></tr><tr><td>PA 002</td><td>3.218</td></tr><tr><td>PA 003</td><td>3.218</td></tr><tr><td>PA 004</td><td>3.016</td></tr><tr><td>PA 005</td><td>3.016</td></tr><tr><td>PA 006</td><td>2.894</td></tr><tr><td>PA 007</td><td>2.894</td></tr><tr><td>PA 008</td><td>2.311</td></tr><tr><td>PA 009</td><td>2.208</td></tr><tr><td>PA 010</td><td>2.208</td></tr><tr><td>PA 011</td><td>2.214</td></tr><tr><td>PA 012</td><td>2.502</td></tr><tr><td>PA 013</td><td>3.315</td></tr><tr><td>PA 014</td><td>3.315</td></tr><tr><td>PA 015</td><td>3.315</td></tr></table>		PA	B _{bold,HH}	PA 001	3.102	PA 002	3.218	PA 003	3.218	PA 004	3.016	PA 005	3.016	PA 006	2.894	PA 007	2.894	PA 008	2.311	PA 009	2.208	PA 010	2.208	PA 011	2.214	PA 012	2.502	PA 013	3.315	PA 014	3.315	PA 015	3.315
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PA 011	2.214																																	
PA 012	2.502																																	
PA 013	3.315																																	
PA 014	3.315																																	
PA 015	3.315																																	
Justification of choice of data or description of	Combination of literature and/or field survey.																																	

measurement methods and procedures applied	
Purpose of Data	Calculation of baseline emission
Comments	The value is fixed ex-ante Assessments, information and results established in initial instance may be used in subsequent instance in lieu of conducting fresh assessments at each instance level in absence of new data

Data / Parameter	$B_{old,i,j}$																																		
Data unit	tonnes/year																																		
Description	Annual quantity of woody biomass that would have been used in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project device type i and batch j																																		
Source of data	Calculated																																		
Value applied		<table><tr><th>PA</th><th>$B_{old,i,j}$</th></tr><tr><td>PA 001</td><td>3.102</td></tr><tr><td>PA 002</td><td>3.218</td></tr><tr><td>PA 003</td><td>3.218</td></tr><tr><td>PA 004</td><td>3.016</td></tr><tr><td>PA 005</td><td>3.016</td></tr><tr><td>PA 006</td><td>2.894</td></tr><tr><td>PA 007</td><td>2.894</td></tr><tr><td>PA 008</td><td>2.311</td></tr><tr><td>PA 009</td><td>2.208</td></tr><tr><td>PA 010</td><td>2.208</td></tr><tr><td>PA 011</td><td>2.214</td></tr><tr><td>PA 012</td><td>2.502</td></tr><tr><td>PA 013</td><td>3.315</td></tr><tr><td>PA 014</td><td>3.315</td></tr><tr><td>PA 015</td><td>3.315</td></tr></table>	PA	$B_{old,i,j}$	PA 001	3.102	PA 002	3.218	PA 003	3.218	PA 004	3.016	PA 005	3.016	PA 006	2.894	PA 007	2.894	PA 008	2.311	PA 009	2.208	PA 010	2.208	PA 011	2.214	PA 012	2.502	PA 013	3.315	PA 014	3.315	PA 015	3.315	
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PA 013	3.315																																		
PA 014	3.315																																		
PA 015	3.315																																		
Justification of choice of data or description of measurement methods and procedures applied	The annual quantity of wood that would have been consumed in absence of the project activity is be calculated as below $B_{old,i,j} = B_{old,HH} / N_{d,HH}$ Where, $B_{old,HH}$ is determined through survey and $N_{d,HH}$ is a monitoring parameter																																		
Purpose of Data	Calculation of baseline emission																																		
Comments	At the instance-level it is assumed ex-ante that there is only one project stove being used per household to calculate $B_{old,i,j}$. Ex-post sampling based monitoring shall also include assessment of																																		

	presence of multiple operational project stoves in a sampled household. The assessments, information and results established in the initial instance may be used in subsequent instances in lieu of conducting fresh assessments if the new instance in the same area (province) of the baseline survey. In case, the new instance is in different area, which have no baseline survey yet, the PPs need to conduct the baseline survey to define $B_{old,i,j}$ before distribution.
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Data / Parameter	η_{old}
Data unit	Percentage
Description	Efficiency of pre project device
Source of data	Default value as per applied methodology
Value applied	10
Justification of choice of data or description of measurement methods and procedures applied	The default value of 10% is used as the replaced system is a three stone fire using firewood (not charcoal), or a conventional device with no improved combustion air supply or flue gas ventilation, i.e. without a grate or a chimney.
Purpose of Data	Calculation of emission reduction
Comments	The value is fixed ex - ante

Data / Parameter	f_{NRB}
Data unit	%
Description	Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass
Source of data	Calculated
Value applied	69.58
Justification of choice of data or description of measurement methods and procedures applied	Tool30 "Calculation of fraction of non- renewable biomass" version 03.0 was used to calculate f_{NRB} values. Project proponents considered the area where biomass is sourced and justify the selection of the area in project design documents. For this project, secondary data is used to determine the parameter as per the calculation of the fraction of non-renewable biomass,

	Version 03. The analysis was independently completed by C4 Ecosolutions (Pty) Ltd The value is calculated as 0.9403, however the uncertainty deduction for fnrb of 0.26 is applied as per the latest version of VMR 0006 methodology, version 01.2. So, the value of 0.6958 is applied for ER calculations as a conservative approach. This value was approved from 1 st monitoring period on 07/03/2024 and continue to be applied in this monitoring period.
Purpose of Data	Calculation of baseline emission
Comments	This parameter shall remain fixed for the monitoring periods

Data / Parameter	NCV _{wood fuel}
Data unit	TJ/Tonne
Description	Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonnes, based on the gross weight of the wood that is 'air-dried')
Source of data	AMS - II.G, Version 12.0
Value applied	0.0156
Justification of choice of data or description of measurement methods and procedures applied	Default value as per applied methodology AMS - II.G version 12.0
Purpose of Data	Calculation of baseline emission
Comments	This parameter shall remain fixed for the monitoring periods

Data / Parameter	EF _{projected_ fossil fuel}
Data unit	tCO ₂ /TJ
Description	Emission factor for the substitution of non-renewable woody biomass by similar consumers
Source of data	AMS - II.G, Version 12.0
Value applied	85.7
Justification of choice of data or description of	Default value for Developing Region "East Asia and the Pacific" as per methodology has been applied. As per Table 1 in Appendix 1 of methodology AMS-II.G. Version 12.0, Viet Nam is classified as being part of Developing Region "East Asia and the Pacific".

measurement methods and procedures applied	
Purpose of Data	Calculation of baseline emission
Comments	This parameter shall remain fixed for the monitoring periods

Data / Parameter	L_y
Data unit	Fraction
Description	Leakage adjustment factor
Source of data	Paragraph 48 of AMS-ILG, Version 12.0
Value applied	0.95
Justification of choice of data or description of measurement methods and procedures applied	Default value applied as per the methodology
Purpose of Data	Calculation of baseline emission
Comments	This parameter shall remain fixed for the monitoring period

4.2 Data and Parameters Monitored

Data / Parameter	No _{i,j}						
Data unit	Number						
Description	Number of commissioned project devices of type i and batch j.						
Source of data	Data base						
Description of measurement methods and procedures to be applied	The Beneficiary Agreement is stored in paper format as well as the same is transferred to electronic database which are maintained by the project proponent detailed the number of project devices installed.						
Frequency of monitoring/recording	At least once every two years						
Value applied		<table><tr><th>PA</th><th>No_{i,j}</th></tr><tr><td>PA 001</td><td>1,558</td></tr></table>	PA	No _{i,j}	PA 001	1,558	
PA	No _{i,j}						
PA 001	1,558						

	<table> <tr><td>PA 002</td><td>20,000</td></tr> <tr><td>PA 003</td><td>4,751</td></tr> <tr><td>PA 004</td><td>20,000</td></tr> <tr><td>PA 005</td><td>10,000</td></tr> <tr><td>PA 006</td><td>20,000</td></tr> <tr><td>PA 007</td><td>10,000</td></tr> <tr><td>PA 008</td><td>16,474</td></tr> <tr><td>PA 009</td><td>20,000</td></tr> <tr><td>PA 010</td><td>11,463</td></tr> <tr><td>PA 011</td><td>20,000</td></tr> <tr><td>PA 012</td><td>11,680</td></tr> <tr><td>PA 013</td><td>20,000</td></tr> <tr><td>PA 014</td><td>20,000</td></tr> <tr><td>PA 015</td><td>10,967</td></tr> </table>	PA 002	20,000	PA 003	4,751	PA 004	20,000	PA 005	10,000	PA 006	20,000	PA 007	10,000	PA 008	16,474	PA 009	20,000	PA 010	11,463	PA 011	20,000	PA 012	11,680	PA 013	20,000	PA 014	20,000	PA 015	10,967
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PA 014	20,000																												
PA 015	10,967																												
Monitoring equipment	-																												
QA/QC procedures to be applied	-.																												
Purpose of data	Calculation of baseline emissions																												
Calculation method																													
Comments	The installed ICS will also be monitored once every two years to determine if they are still operating; those devices that have been replaced by an equivalent in –service device can be counted as operating as per AMS - II.G, version 12.0																												

Data / Parameter	$n_{y,i,j}$
Data unit	Fraction
Description	Proportion of commissioned project devices of type i and batch j ($N_{0,i,j}$) that remain operating in year y.
Source of data	Household survey
Description of measurement methods and procedures to be applied	Surveys conducted on a representative sample of end-users taken from the instance project activity distribution database to determine the proportion of cook stoves still operating. The number of stoves still operating are determined based on representative sampling. The total number of operational stoves shall be 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 in the project database

Frequency of monitoring/recording	At least once every two years
Value applied	1
Monitoring equipment	-
QA/QC procedures to be applied	Each the instance project implementer shall maintain a distribution record to calculate this parameter. The database is periodically checked by the project proponent for consistency and accuracy. Each stove have unique serial number.
Purpose of data	Calculation of baseline emissions
Calculation method	-
Comments	The installed ICS will also be monitored once every two years to determine if they are still operating; those devices that have been replaced by an equivalent in –service device can be counted as operating as per AMS - II.G, version 12.0

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	Household survey
Description of measurement methods and procedures to be applied	Recorded at the time of commissioning/distribution of project devices and crosschecked by biennial survey on continued use of pre-project devices. The total number of pre-project operational stoves shall be calculated as the fraction of stoves of type i found in operation in the sampling survey as part of the total number of distributed ICS of type i in the project database
Frequency of monitoring/recording	At least once every two year
Value applied	0.9484
Monitoring equipment	-
QA/QC procedures to be applied	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 of type i

Purpose of data	Calculation of baseline emission
Calculation method	The sampled households were checked for presence of baseline stove and if it was being used along with project stove for cooking. 1.0 for days on which only ICS is used; 0.0 for days on which on traditional stove is used 0.5 for days when both ICS and traditional stoves are used
Comments	The record to be kept for crediting period + 2 years

Data / Parameter	$\eta_{new,i,j}$
Data unit	%
Description	Efficiency of the project device <i>i</i> and batch <i>j</i> . implemented as part of the project activity
Source of data	The efficiency of the project devices shall be based on any of the options provided in row below "Measurement methods and procedures".
Description of measurement methods and procedures to be applied	Efficiency shall be measured/estimated as per the following: A simplified approach may be used, when the efficient cookstoves are produced by a manufacture with a recognized management system in place according to ISO 9001:2015 in manufacturing and supplying of biomass/firewood cookstoves of model 3G, 4G and TK90, Ecozen (e.g. ISO certification) to ensure that the individual equipment produced do not vary beyond the range of acceptance limits (e.g. characteristics such as materials, critical dimensions): - Conduct a sample test on three cook stoves with three tests conducted for each stove at each age. The test can be carried out by project proponents by themselves or stove manufacturers. - If the standard deviation of the nine test results for each stove indicated above is very small and 90/10 precision requirement is met (in this case, the value of the t-distribution for 90 per cent confidence shall be used instead of Z value), the efficiency determined is acceptable, otherwise more sample tests would be required until 90/10 precision is met. The value obtained from any of the options above is used to calculate the emission reductions of the systems. The yearly efficiency loss of ICS is calculated as per paragraph 37 d) of AMS-II.G Version-12.0
Frequency of monitoring/recording	Annually

Value applied	Type of cookstove	Efficiency	Type of cookstove	Efficiency
	TK 90 (year = 2) - stove 1	27.93%	TK 90 (year = 3) - stove 1	26.85%
	TK 90 (year = 2) - stove 2	28.17%	TK 90 (year = 3) - stove 2	27.30%
	TK 90 (year = 2) - stove 3	27.51%	TK 90 (year = 3) - stove 3	27.12%
	Average	27.87%	Average	27.09%
Monitoring equipment	Based on WBT method (thermometer, weighing scales, moisture content meters, stopwatch and dry cabinet)			
	Weighing Scale: Type: FCE_15K5N Manufacturer: Germany Accuracy class: +/- 5 g Serial number: W170044397 Calibration frequency: Annual Calibrated by Quatest 1, Certification no.23/DL1/0098-01, dated 19/04/2023 Validity: 30/04/2024			
	Digital Thermometer: Type: TM100 Manufacturer: Extech - China Accuracy class: 0.1 °C Serial number: 181206716 Calibration frequency: Annual Calibrated by Quatest 1, Certification no. 23/DL4/110-01, dated 11/04/2023 Validity: 30/04/2024			
	Dry cabinet Type: FCD-3000 Manufacturer: China Accuracy class: 1 °C Serial number: 110.02 Calibration frequency: Annual Calibrated by Quatest 1, Certification no. 23/DL4/110-02, dated 11/04/2023 Validity: 30/04/2024			
	Stopwatch: Type: 365510 Manufacturer: Extech Accuracy class: 0.01s Serial number: C-510 Calibration frequency: Annual Calibrated by VMI, certification no.V09.CN5.077.23, dated 07/04/2023 Validity: 30/04/2024			

	Moisture meter: Type: Laser liner Manufacturer: Dampfinder compact Accuracy class: 0.1% Serial number: 18042923 Calibration frequency: Annual Calibrated by VMI, certification no.V06.CN5.026.23, dated 20/04/2023 Validity: 30/04/2024
QA/QC procedures to be applied	-
Purpose of data	Calculation of baseline emission
Calculation method	To determine the stove's efficiency, the WBT testing has also been performed by stove manufacturers (Viet Charcoal) as below: (i) Conduct a sample test on three cook stoves with three tests conducted for each stove at each age. We distributed only TK90 stove in this monitoring period and there are stove 2 year and 3 years that had been operated in this monitoring period so we conduct sample tests on 3 cookstoves with 9 tests for each stove at each age. The tests were carried out by stove manufacturers. (ii) The standard deviation of the test results indicated above is very small and 95/10 precision requirement is met. The efficiency determined is acceptable (detail result in ER sheet)
Comments	If any sample stove is found to be operating below the 20% efficiency, the proportionate number of stoves of that type included in the instance project activity is considered to be non-operational and not accounted for ER calculation.

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 shall be used as the date of commissioning for the entire batch
Source of data	Internal records
Description of measurement methods	Distribution records

and procedures to be applied	
Frequency of monitoring/recording	Fixed and recorded at the time of commissioning/distribution of the last project device in the batch
Value applied	Refer the ICS distribution database
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of data	To understand the information about commissioning batch
Calculation method	
Comments	To be reported in the monitoring report

Data / Parameter	Date of commissioning of project device i
Data unit	Date
Description	Actual date of commissioning of the project device
Source of data	Internal records
Description of measurement methods and procedures to be applied	Distribution records
Frequency of monitoring/recording	Fixed and recorded at the time of commissioning/distribution
Value applied	Refer the ICS distribution database
Monitoring equipment	-
QA/QC procedures to be applied	-
Purpose of data	Start Date
Calculation method	

Comments	To be reported in the monitoring report
Data / Parameter	N _{d,HH}
Data unit	Number
Description	Number of project devices distributed per household
Source of data	Internal records
Description of measurement methods and procedures to be applied	Recorded at the time of commissioning/distribution of project devices and it can be crosschecked with user details having number of ICS.
Frequency of monitoring/recording	Recorded at the time of commissioning/distribution of project devices
Value applied	1.0
Monitoring equipment	-
QA/QC procedures to be applied	The procedure was developed in electronic system to record number of ICS provided to particular household
Purpose of data	To calculate baseline emission
Calculation method	-
Comments	The record to be kept for crediting period + 2 years

4.3 Monitoring Plan

Representative sampling was undertaken that is designed in line with the requirements of the AMS-II.G methodology applied and the “Standard for sampling and surveys for CDM project activities and programme of activities”, version 09.0. This sampling plan follows the recommended outline as contained in “Guidelines for sampling and surveys for CDM project activities and programme of activities”, version 04.0. The sampling plan is as follows:

(a) For monitoring survey Monitoring Parameters

$N_{o,i,j}$	Number of commissioned project devices of type i and batch j operating during year y
$\mu_{y,i,j}$	Adjustment to account for any continued use of pre-project devices during the year y
$\eta_{new,i,j}$	Efficiency of the project device i and batch j , implemented as part of the project activity

To monitor the required parameters data was collected from a statistically valid sample of ICS in the database for the monitoring period, as per this sampling plan. The method of collecting data was field surveys and the frequency of data collection is as per the frequency defined for each parameter in the above section. Data was collected from the field surveys, entered in the database and included in the monitoring report.

As per approved methodology, the following guidance is being used for the representative sampling method:

“A statistically valid sample of the locations where the devices are deployed, with consideration, in the sampling design, of occupancy and demographic differences can be used to determine parameter values used to calculate emission reductions, as per the relevant requirements for sampling in the “Standard for sampling and surveys for CDM project activities and programmes of activities”. When biennial inspection is chosen a 95 per cent confidence interval and a 10 per cent margin of error shall be achieved for the sampling parameter. On the other hand, when the project proponent chooses to inspect annually, a 90 per cent confidence interval and a 10 per cent margin of error shall be achieved for the sampled parameters. In cases where survey results indicate that 90/10 precision or 95/10 precision are not achieved, the lower bound of the 90 per cent or 95 per cent confidence interval of the parameter value may be chosen as an alternative to repeating the survey efforts to achieve the 90/10 or 95/10 precision.”

Sample size was chosen for a 95/10 precision (95% confidence interval and 10% margin of error); in cases where survey results indicate that 90/10 precision is not achieved, the lower bound of a 95% confidence interval of the parameter value may be chosen as an alternative to repeating the survey efforts to achieve a 95/10 precision.

As per para 3 of “Standard: Sampling and Surveys for CDM project activities and programme of activities”, version 09” The general requirements of sampling methods shall be applicable to PoAs with any requirement specified in the applicable methodologies having precedence”.

Additional requirement for grouped project as per sampling standard, version 09, para 21 to 23, EB 110 is followed:

In case a single sampling plan for more than one instance is used, “parameter values shall be estimated by sampling in accordance with the requirements in the applied methodology separately and independently for each of the instance project activity included in the grouped

project except when a single sampling plan covering a grouped project is undertaken applying 95/10 confidence/precision for the sample size calculation”.

(b) Sample Frame

The sampling frame refers to all the information in the database. The grouped project is open to different instance Implementers and different models of ICS. As explained below, to take the different characteristics of different project proponent and ICS models and other factors that may affect estimates into consideration, the instances shall be either sampled separately and independently, or grouped together under a single sampling plan across instances, in each case using strata that have unique combinations of these factors.

(i) Target Population

The overall target population is the ICS distributed. The ICS to be sampled drawn from the list of individual ICS serial ID numbers contained in the sales record database, which is maintained by the distributor

(ii) Sampling method

Sampling was conducted using Stratified random sampling techniques, and detailed calculations are provided within the monitoring plan as per CDM guidelines “Sampling and surveys for CDM project activities and programmes of activities”. Optionally, other sampling approaches may be used in accordance with “Sampling and surveys for CDM project activities and programmes of activities” and Guideline for Sampling and Surveys for CDM Project. Activities when sampling techniques or statistical analysis necessitates it.

(iii) Sample size

The sample size was calculated using the EB 86, “Guidelines for Sampling and Surveys for CDM Project Activities and Programme of Activities”, version 04.0.

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.

In order to calculate the required sample size estimates, values for the proportions, mean values, and standard deviations are required. As per Guidelines for Sampling and surveys for CDM project activities and programmes of activities (version 04.0) Appendix 1 paragraph 5, 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.

For the registration/inclusion purpose of instance, option C shall be applied. Thus, there are different equations to calculate a required sample size for different situations. Different equation that is used, depends on the type of parameter of interest, that is either:

(a) A percentage –retention rate of improved cookstoves

(b) A numeric value –the mean value of operating efficiency of improved cookstoves.

For all of the parameters 95% confidence is required that the margin of error in the estimate is not more than $\pm 10\%$ in relative terms.

For a percentage –retention rate of improved cookstoves (N_y) and adjustment to account for any continued use of pre-project devices during the year y ($\mu_{y,i,j}$), the following equation is be used

For population who use improved cookstove serviced by the project activity in year y ($N_{y,i,j}$) and adjustment to account for any continued use of pre-project devices during the year y ($\mu_{y,i,j}$), the equation that is used is:

$$n \geq \frac{1.96^2 N \times p(1-p)}{(N-1) \times 0.1^2 \times p^2 + 1.96^2 p(1-p)}$$

Where:

n	: Sample size
N= N_y	: Population who consumes the improved cookstove serviced by the project activity in year y
p	: Our expected proportion of the installed improved cookstove will be in use and operating at the specified efficiency)
1.96	: Represents the 95 % confidence required
0.1	: Represents the 10 % relative precision

Based on the above assumptions, the resulting sampling size for a 95/10 confidence/precision is calculated for total population size, the result below:

Monitoring parameter(s)	Stove Operating Fraction for determination of N_y and Utilization of Project stoves - $\mu_{y,i}$
Sampling frame(s)	Given stove model and age population
Sampling approach	Stratified random sampling across stove models and age

Type of cookstove	Age	Stove population	Expected value	Calculated Sample Size (n)	Actual sample size
TK90	3	101,305	0.9000	20	25
TK90	2	115,588	0.9	23	29
Sample size determination					
Estimated Operation (p)				0.90	
V _{operation} = $p(1-p)/p^2$				0.11	
Calculated Sample Size				43	

Additionally, as per registered sampling plan, it's recommended that the PPs may choose to use the same samples to monitor more than one parameter, where parameters have same units. 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. Also, oversampling is strongly encouraged, not only to compensate for any attrition, outliers or nonresponse associated with the sample, but also to prevent a situation at the analysis stage where the required reliability is not achieved and additional sampling efforts would be required. We expect the response rate from the sampled households to be 80%. Thus, we would decide to sample $43/0.8 = 54$ samples. A total of 54 samples were selected.

Since parameters $N_{y,j,i}$ and $\mu_{y,i,j}$ share the same sampling units, CME may choose to have one common survey for these two parameters with largest number of sample size between these two parameters being chosen. 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. Therefore the sample size for parameters $N_{y,i,j}$ and $\mu_{y,i,j}$ is 54 samples.

For a numeric value –the mean value of operating efficiency of improved cookstoves - Parameter $\eta_{new,i,j}$

The thermal efficiency $\eta_{new,i,j}$ is a monitoring parameter and WBT testing has also been performed by stove manufacturers as below:

Conduct a sample test on three cook stoves with three tests conducted for each stove for each age. Total 02 ages of TK90's cook stove (2-year-old and 3 year-old) that was distributed in this grouped project, so we conduct sample tests for 03 cookstoves, 3 test for each stove for each age with total of 18 tests. To save cost to take efficiency samples, we will choose 06 samples available for efficiency from 54 samples of parameter N_y .

Result of testing as below:

TK90 - age 2

Model	Year	The times of Testing	Thermal efficiency testing result (%)	Averaged Thermal efficiency (%)
TK90	2	1st	27.82%	27.93%
		2nd	28.04%	
		3rd	27.92%	
TK90	2	1st	28.15%	28.17%
		2nd	28.04%	
		3rd	28.32%	
TK90	2	1st	27.75%	27.51%
		2nd	27.24%	
		3rd	27.55%	

TK90 - age 3

Model	Year	The times of Testing	Thermal efficiency testing result (%)	Averaged Thermal efficiency (%)
TK90	3	1st	26.72%	26.85%
		2nd	26.85%	
		3rd	26.98%	
TK90	3	1st	27.14%	27.30%
		2nd	27.42%	
		3rd	27.35%	
TK90	3	1st	26.98%	27.12%
		2nd	27.12%	
		3rd	27.25%	

The test was carried out by stove manufacturers.

The standard deviation of the test results indicated above is very small and 90/10 precision requirement is met. The efficiency determined is acceptable

(a) Analysis of data collected and confidence/precision achieved

Analysis of the data monitored through sampling revealed the following results

Parameter $N_{y,i}$

ANALYSIS for parameter N_y	
Samples Monitored	54
Survey result	1.000
Standard Error of operation	0.000
Upper Boundary Level	100.00%
Lower Boundary Level	100.00%
Relative precision (Margin of error)	0.00%
Check precision	0.00%
Result	Ok, reliability level met
Lower Bound confidence value	Not applicable

Parameter $\mu_{y,i}$

ANALYSIS for parameter μ_y	
Samples Monitored	54
Utilization Measured	0.9484
Standard Error of Utilization	0.030
Upper Boundary Level	0.950
Lower Boundary Level	0.889
Relative precision (Margin of error)	6.22%
Check precision	6.22%
Result	Ok, reliability level met
Lower Bound confidence value	Not applicable

For detailed calculations refer ER calculator sheet.

Parameter $\eta_{new,i,j}$

TK90-Age 2

RESULT TK90 (year 2)					
Sampling Population	Sampling frame size	Age	Monitored Sample Size	Monitored efficiency (%)	Monitored standard deviation
TK90	115,588	2	3	27.87%	0.33%
Reliability Check					
Samples Monitored					3
Mean efficiency					27.87%
Standard Error of Mean					0.1917%
Upper Boundary Level					28.69%
Lower Boundary Level					27.05%
Relative precision (Margin of error)					2.96%
Check precision					2.96%
Result					Ok, reliability level met
Lower Bound confidence value					Not applicable

TK90-Age 3

RESULT TK90 (year 3)					
Sampling Population	Sampling frame size	Age	Monitored Sample Size	Monitored efficiency (%)	Monitored standard deviation
TK90	101,305	3	3	27.09%	0.23%
Reliability Check					
Samples Monitored					3
Mean efficiency					27.09%
Standard Error of Mean					0.1315%
Upper Boundary Level					27.66%
Lower Boundary Level					26.52%
Relative precision (Margin of error)					2.09%
Check precision					2.09%
Result					Ok, reliability level met
Lower Bound confidence value					Not applicable

(b) Implementation plan

Survey Implementation Schedule:

The survey for collecting the details of monitoring parameters was conducted from 26th Feb 2024 to 03rd Mar 2024 of the crediting monitoring period.

The overall monitoring and the implementation of the sampling was coordinated by the project proponent and the management staff. They ensure successful monitoring of the emission reductions of the proposed project during its crediting period. Furthermore, the survey of the representative sample for the parameters were carried out by the distributor together with the project proponent.

The survey method has been used by project proponent include:

(a) Hard-copy questionnaires

(b) Face to face interview

All sampling efforts were conducted by qualified personnel who have undergone training as part of the grouped project. Any samplers are required to speak the native language(s) in which improved cookstoves have been implemented, allowing for full understanding of any responses given by users, and any questions therein.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

In accordance with the applied methodology, the baseline scenario is 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 actual baseline scenario is the use of non-renewable biomass. The quantity of biomass used in absence of the project activity for target consumers will be determined at the Instance level. Assessments, information used in initial instances may be used in subsequent instances in lieu of conducting fresh assessments at each instance level.

5.2 Project Emissions

The operation of ICS does not involve consumption of fossil fuels and electricity, So, there is no project emissions considered.

5.3 Leakage Emissions

As detailed in paragraph 41 of the methodology AMS-II.G version 12.0, leakage related to the non-renewable woody biomass saved by the project activity shall be accounted for by multiplying $B_{old,i,j}$ by a net to gross adjustment factor of 0.95 to account for leakages, in which case surveys are not required.

5.4 GHG Emission Reductions and Carbon Dioxide Removals

Emission reductions are calculated as follows:

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

Where:

i	Indices for the situation where more than one type of project device is introduced to replace the pre-project devices
j	Indices for the situation where there is more than one batch of project device
ER _y	Emission reductions during year y in t CO ₂ e
ER _{y,i,j}	Emission reductions by project device of type i and batch j during year y in t CO ₂ e
LE _y	Leakage emissions in the year y

Since the project activity instance involves the deployment of improved cookstove, the following equation is applicable as per AMS-II.G, Version 12.0:

$$ER_{y,i,j} = B_{y,savings,i,j} \times N_{o,i,j} \times n_{y,i,j} \times \mu_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossil\ fuel}$$

$B_{y,savings,i,j}$	: Quantity of woody biomass that is saved in tonnes per cookstove device of type i and batch j during year y
$f_{NRB,y}$	: Fraction of woody biomass that can be established as non-renewable biomass (fNRB)
$NCV_{biomass}$	: Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne, based on the gross weight of the wood that is 'air-dried')

$EF_{\text{projected fossil fuel}}$	: Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass by similar consumers. Use a value of 85.7 t CO ₂ /TJ
$N_{o,i,j}$	: Number of project devices of type i and batch j operating during year y
$n_{y,i,j}$	: Proportion of commissioned project devices of type i and batch j ($N_{o,i,j}$) that remain operating in year y (fraction)
μ_y	: Adjustment to account for any continued use of pre-project devices during the year y.

Determine $B_{y,\text{savings},i,j}$

$B_{y,\text{savings},i,j}$ is calculated using the following formulae in accordance with equation 7 of the approved methodology AMS-II.G Version 12.0:

$$B_{y,\text{savings},i,j} = B_{\text{old},i,j} \times [1 - (\eta_{\text{old},i,j} / \eta_{\text{new},i,j})]$$

Where:

$B_{\text{old},i,j}$	: Annual quantity of woody biomass that would have been used in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project device type i and batch j
$\eta_{\text{old},i,j}$	: Efficiency of the old devices being replaced by project devices of type i and batch j
$\eta_{\text{new},i,j}$	: Efficiency of the project device i and batch j.

Detail for parameter of each project instance is description in table below:

PA	$B_{\text{old},i,j}$	$\eta_{\text{old},i,j}$	$\eta_{\text{new},2,j}$	$B_{2,\text{savings},\text{TK90},j}$	$\eta_{\text{new},3,j}$	$B_{3,\text{savings},\text{TK90}}$
001	3.102	10%	27.87%	1.989	27.09%	1.957
002	3.218	10%	27.87%	2.063	27.09%	2.030
003	3.218	10%	27.87%	2.063	27.09%	2.030
004	3.016	10%	27.87%	1.934	27.09%	1.903
005	3.016	10%	27.87%	1.934	27.09%	1.903
006	2.894	10%	27.87%	1.856	27.09%	1.826

007	2.894	10%	27.87%	1.856	27.09%	1.826
008	2.311	10%	27.87%	1.482	27.09%	1.458
009	2.208	10%	27.87%	1.416	27.09%	1.393
010	2.208	10%	27.87%	1.416	27.09%	1.393
011	2.214	10%	27.87%	1.420	27.09%	1.397
012	2.502	10%	27.87%	1.604	27.09%	1.578
013	3.315	10%	27.87%	2.126	27.09%	2.091
014	3.315	10%	27.87%	2.126	27.09%	2.091
015	3.315	10%	27.87%	2.126	27.09%	2.091

Determination of project devices

The grouped project activity has been distributed of 216,893 ICSs free of cost to households in this monitoring period. As the representative sampling, all of stove are operating in good condition. 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 in the project database. Detail below

PA	No _{i,j}	n _{y,i,j}	N _{y,i,j}
001	1,558	1	1,558
002	20,000	1	20,000
003	4,751	1	4,751
004	20,000	1	20,000
005	10,000	1	10,000
006	20,000	1	20,000
007	10,000	1	10,000
008	16,474	1	16,474
009	20,000	1	20,000
010	11,463	1	11,463

011	20,000	1	20,000
012	11,680	1	11,680
013	20,000	1	20,000
014	20,000	1	20,000
015	10,967	1	10,967

Determination of μ_y .

This parameter should be monitored using one for the following methods:

- If the pre-project devices are decommissioned and no longer used, as determined by the monitoring survey its value is 1.0.
- if both project device and pre – project device is used; its value is 0.5
- If only pre – project device is used; its value is 0.0

Result of representative sampling show that, in 54 households are survey, there are 5 households use traditional stove present along with project stove, so the fraction of adjustment to account for any continued use of pre-project devices is 0.9484.

Result calculation for each PA depend on number of distributed ICS and proportion activity days in a year as following as (Detail of calculation of emission reduction in ER sheet).

PA	Batch	Age	Quantity	Start date of first stove given in batch	End date of stove given in batch	Vinage 1 (From 01/07/2023 to 31/12/2023)						Vinage 2 (From 01/01/2024 to 29/02/2024)					
						Start date of crediting	End date of crediting	Equivalent Operational year	Baseline emission	Leakage	Actual emission reduction	Start date of crediting	End date of crediting	Equivalent Operational year	Baseline emission	Leakage	Actual emission reduction
001	1	3	1,558	1-Nov-21	1-Nov-21	1-Jul-23	31-Dec-23	0.50	1,356	68	1,288	1-Jan-24	29-Feb-24	0.16	442	22	420
002	1	3	8,615	6-Dec-21	19-Dec-21	1-Jul-23	31-Dec-23	0.50	7,778	389	7,389	1-Jan-24	29-Feb-24	0.16	2,536	127	2,409
002	2	2	7,027	1-May-22	15-May-22	1-Jul-23	31-Dec-23	0.50	6,448	322	6,126	1-Jan-24	29-Feb-24	0.16	2,103	105	1,998
002	3	2	4,358	5-Jun-22	21-Jun-22	1-Jul-23	31-Dec-23	0.50	3,999	200	3,799	1-Jan-24	29-Feb-24	0.16	1,304	65	1,239
003	1	3	3,180	6-Dec-21	25-Dec-21	1-Jul-23	31-Dec-23	0.50	2,871	144	2,727	1-Jan-24	29-Feb-24	0.16	936	47	889
003	2	2	1,571	11-Jun-22	21-Jun-22	1-Jul-23	31-Dec-23	0.50	1,442	72	1,370	1-Jan-24	29-Feb-24	0.16	470	24	446
004	1	3	5,890	6-Jan-22	13-Jan-22	1-Jul-23	31-Dec-23	0.50	4,984	249	4,735	1-Jan-24	29-Feb-24	0.16	1,625	81	1,544
004	2	3	7,798	14-Feb-22	25-Feb-22	1-Jul-23	31-Dec-23	0.50	6,599	330	6,269	1-Jan-24	29-Feb-24	0.16	2,152	108	2,044
004	3	2	6,312	2-Mar-22	6-Mar-22	1-Jul-23	31-Dec-23	0.50	5,429	271	5,158	1-Jan-24	29-Feb-24	0.16	1,770	89	1,681
005	1	3	1,497	6-Jan-22	9-Jan-22	1-Jul-23	31-Dec-23	0.50	1,267	63	1,204	1-Jan-24	29-Feb-24	0.16	413	21	392
005	2	3	1,288	25-Feb-22	26-Feb-22	1-Jul-23	31-Dec-23	0.50	1,090	55	1,035	1-Jan-24	29-Feb-24	0.16	355	18	337
005	3	2	7,215	2-Mar-22	19-Mar-22	1-Jul-23	31-Dec-23	0.50	6,205	310	5,895	1-Jan-24	29-Feb-24	0.16	2,023	101	1,922
006	1	3	4,466	5-Jan-22	21-Jan-22	1-Jul-23	31-Dec-23	0.50	3,626	181	3,445	1-Jan-24	29-Feb-24	0.16	1,182	59	1,123
006	2	3	11,534	15-Feb-22	28-Feb-22	1-Jul-23	31-Dec-23	0.50	9,365	468	8,897	1-Jan-24	29-Feb-24	0.16	3,054	153	2,901
006	3	2	4,000	14-Apr-22	20-Apr-22	1-Jul-23	31-Dec-23	0.50	3,301	165	3,136	1-Jan-24	29-Feb-24	0.16	1,076	54	1,022
007	1	3	4,221	9-Jan-22	21-Jan-22	1-Jul-23	31-Dec-23	0.50	3,427	171	3,256	1-Jan-24	29-Feb-24	0.16	1,118	56	1,062
007	2	2	5,779	22-Apr-22	28-Apr-22	1-Jul-23	31-Dec-23	0.50	4,769	238	4,531	1-Jan-24	29-Feb-24	0.16	1,555	78	1,477
008	1	3	9,162	9-Feb-22	27-Feb-22	1-Jul-23	31-Dec-23	0.50	5,941	297	5,644	1-Jan-24	29-Feb-24	0.16	1,937	97	1,840
008	2	2	7,312	2-Mar-22	29-Mar-22	1-Jul-23	31-Dec-23	0.50	4,819	241	4,578	1-Jan-24	29-Feb-24	0.16	1,571	79	1,492
009	1	3	12,386	5-Dec-21	26-Dec-21	1-Jul-23	31-Dec-23	0.50	7,673	384	7,289	1-Jan-24	29-Feb-24	0.16	2,502	125	2,377
009	2	3	6,110	16-Jan-22	24-Jan-22	1-Jul-23	31-Dec-23	0.50	3,785	189	3,596	1-Jan-24	29-Feb-24	0.16	1,234	62	1,172
009	3	2	1,504	14-Jun-22	15-Jun-22	1-Jul-23	31-Dec-23	0.50	947	47	900	1-Jan-24	29-Feb-24	0.16	309	15	294

010	1	2	11,463	2-Jun-22	23-Jun-22	1-Jul-23	31-Dec-23	0.50	7,218	361	6,857	1-Jan-24	29-Feb-24	0.16	2,354	118	2,236
011	1	3	6,000	17-Jan-22	28-Jan-22	1-Jul-23	31-Dec-23	0.50	3,727	186	3,541	1-Jan-24	29-Feb-24	0.16	1,215	61	1,154
011	2	2	14,000	1-Jun-22	25-Jun-22	1-Jul-23	31-Dec-23	0.50	8,839	442	8,397	1-Jan-24	29-Feb-24	0.16	2,882	144	2,738
012	1	2	11,680	2-May-22	26-May-22	1-Jul-23	31-Dec-23	0.50	8,334	417	7,917	1-Jan-24	29-Feb-24	0.16	2,717	136	2,581
013	1	3	300	12-Dec-21	12-Dec-21	1-Jul-23	31-Dec-23	0.50	279	14	265	1-Jan-24	29-Feb-24	0.16	91	5	86
013	2	3	6,100	3-Jan-22	26-Jan-22	1-Jul-23	31-Dec-23	0.50	5,674	284	5,390	1-Jan-24	29-Feb-24	0.16	1,850	93	1,757
013	3	3	6,500	11-Feb-22	28-Feb-22	1-Jul-23	31-Dec-23	0.50	6,046	302	5,744	1-Jan-24	29-Feb-24	0.16	1,971	99	1,872
013	4	2	7,100	18-Apr-22	21-Apr-22	1-Jul-23	31-Dec-23	0.50	6,712	336	6,376	1-Jan-24	29-Feb-24	0.16	2,189	109	2,080
014	1	3	1,900	11-Feb-22	22-Feb-22	1-Jul-23	31-Dec-23	0.50	1,767	88	1,679	1-Jan-24	29-Feb-24	0.16	576	29	547
014	2	2	9,500	3-Mar-22	16-Mar-22	1-Jul-23	31-Dec-23	0.50	8,981	449	8,532	1-Jan-24	29-Feb-24	0.16	2,928	146	2,782
014	3	2	8,600	23-Apr-22	29-Apr-22	1-Jul-23	31-Dec-23	0.50	8,130	407	7,723	1-Jan-24	29-Feb-24	0.16	2,651	133	2,518
015	1	3	2,600	5-Dec-21	12-Dec-21	1-Jul-23	31-Dec-23	0.50	2,418	121	2,297	1-Jan-24	29-Feb-24	0.16	789	39	750
015	2	3	200	19-Feb-22	19-Feb-22	1-Jul-23	31-Dec-23	0.50	186	9	177	1-Jan-24	29-Feb-24	0.16	61	3	58
015	3	2	8,167	6-Apr-22	11-Apr-22	1-Jul-23	31-Dec-23	0.50	7,721	386	7,335	1-Jan-24	29-Feb-24	0.16	2,518	126	2,392

Total for each vintage as below:

Vintage period	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Reduction VCUs (tCO ₂ e)	Removal VCUs (tCO ₂ e)	Total VCUs (tCO ₂ e)
01-Jul-2023 to 31-Dec-2023	173,153	0	8,656	164,497	0	164,497
01-Jan-2024 to 29-Feb-2024	56,459	0	2,827	53,632	0	53,632
Total	229,612	0	11,483	218,129	0	218,129

PA	Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
PA 1	01-Jul-2023 to 31-Dec-2023	26,253	1,288	-95.09%	- The distribution of ICSs is not completed fully as registered PD - Changing the value of F_{nrb} - Efficiency of cookstove reduce annually - Some households still use traditional cook stove belong with project cookstove so fraction of adjustment to account for any continued use of pre-project devices is lower than 1.
	01-Jan-2024 to 29-Feb-2024	8,561	420	-95.09%%	
	Total	34,814	1,708	-95.09%	

APPENDIX 1: COMMERCIALY SENSITIVE INFORMATION

The project involves distribution ICSs to individual households, there are no commercially sensitive information so this section is not applicable

APPENDIX 2: SUPPLY CHAIN

Public announcement for project activity was posted on website of SIPCO.

