



WOMEN LED CLEANER COOKING INITIATIVE IN ODISHA

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Prepared by	SDG13 Ventures Pte Ltd

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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The proposed grouped project seeks to increase access of households and communities to improved cook stoves in the rural and semi-urban households of Odisha, India. According to 2011 census, Odisha has a population of 42 million, which comprises about 3.4% of India's population. The rural and urban population of the state are 35 million and 7 million respectively. Odisha ranks 22 out of 23 in Human Development Index rank and a value of 0.362 for the period 2007-2008.

The proposed grouped project activity will help in reducing greenhouse gas emissions. The baseline cookstoves which are traditional 3-stone cookstoves have low thermal efficiency and emits higher amount of greenhouse gases, they will be replaced with thermally efficient improved cookstoves (ICS). Implementation of the proposed grouped project activity will also help in the reduction of consumption of firewood, reduction of greenhouse gases, conservation of forest and also improving the quality of health of the ICS users. This is complimented by better indoor air quality as well as drudgery reduction in everyday cooking for women involved.



Figure 1: A beneficiary using a Greenway improved cookstove

The Project Proponent (PP) has distributed /single pot Greenway Jumbo cook stoves. During the current monitoring period, no new distribution of improved cookstoves has happened, and as of 30th June, 2025, which is the end date of the current monitoring period and the last date of ICS installation, 102,223 stoves have been in operation in 27 districts of Odisha. The ICS deployed under project activity are manufactured and supplied by Greenway Grameen Infra Pvt Ltd. The PP works with local partners to identify and supply stoves, conduct awareness programs and collect data.

Table 1: Distribution record of improved cookstoves in Odisha

Sr. No	Name of district	Number of stoves distributed
1	Angul	7,489
2	Balangir	4
3	Baleshwar	2
4	Bargarh	24
5	Bhadrak	6
6	Boudh	2
7	Cuttack	6,431
8	Debagarh	11,118
9	Deogarh	3
10	Dhenkanal	15,446
11	Ganjam	51
12	Jagatsinghpur	12
13	Jajapur	18
14	Jharsuguda	1,339
15	Kandhamal	11
16	Kendrapara	11
17	Kendujhar	11
18	Khorda	11,587
19	Koraput	5
20	Mayurbhanj	8
21	Nayagarh	11,551
22	NUAPADA	1
23	Puri	3,854
24	Rayagada	1
25	Sambalpur	2,385
26	Sonapur	3

27	Sundergarh	30,850
	Total	102,223

The distribution of ICS started from 1st June, 2022, hence, the first batch of commissioning is 1st June, 2022, which is also the start date of the crediting period for the project activity. Since 1st June, 2022 Onwards, the daily basis number of ICS distributed is considered as a batch for calculation of emission reduction. All the data recorded during stove registration was captured through a mobile application, the collected information then transferred to the project database.

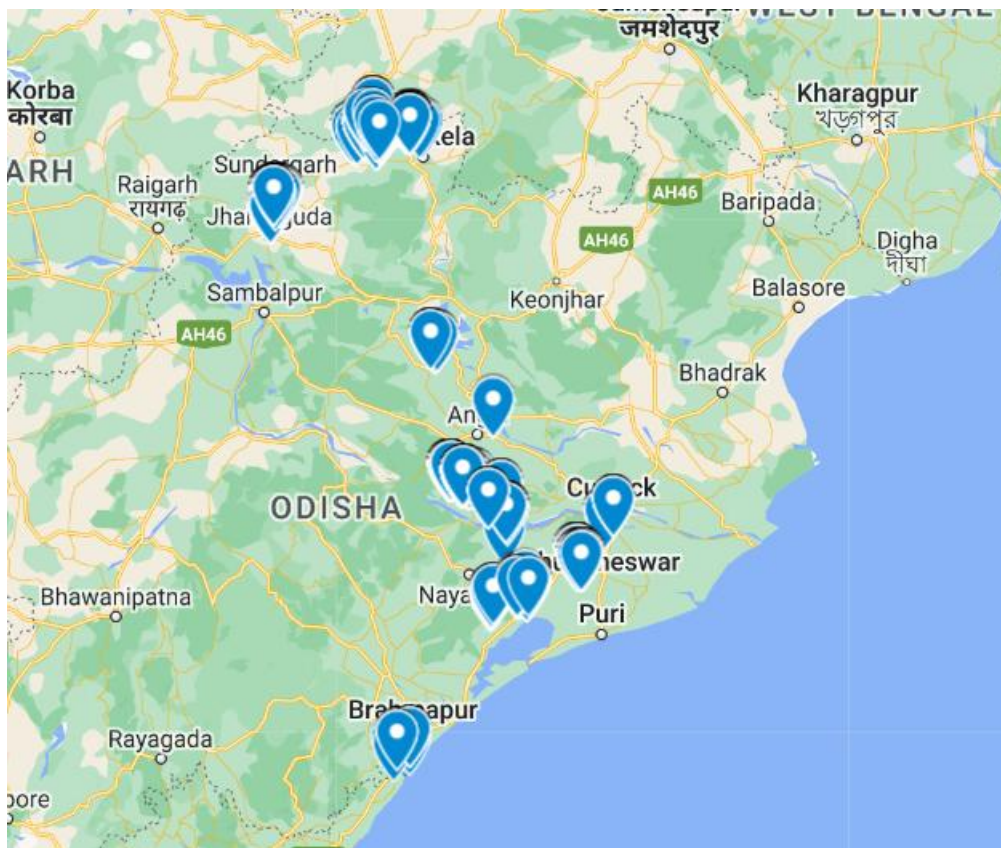


Figure 2. Map of stove distributions in the project location

The survey to collect information on the number of project ICS operational, any additional cook stove or baseline cook stove usage along with project ICS was conducted from 25th September, 2025 to 10th October, 2025. During the survey, 97.8% of the project ICS were found to be operational. A slight usage of baseline stove was seen during current monitoring period, which was not significant.

During the current monitoring period i.e., from 1 July 2024 to 30 June 2025, total 100,001 ICS were operational and resulted in 515,782 tCO₂e emission reductions.

1.2 Audit History

Audit type	Period	Program	Validation/verification body name	Number of years
Validation/verification	13 th May, 2022 to 15 th November, 2022	VCS	KBS Certification Services Pvt. Ltd.	Approx. 0.5
Monitoring Period 1 (Verification)	1 st June, 2022 to 30 th June, 2023	VCS	4K Earth Science Pvt. Ltd.	1.08
Monitoring Period 2 (Verification)	1 st July, 2023 to 30 th June, 2024	VCS	Applus + Certifications Pvt. Ltd.	1
Monitoring Period 3 (Verification)	1 st July, 2024 to 30 th June, 2025	VCS	Applus + Certifications Pvt. Ltd.	1

1.3 Sectoral Scope and Project Type

Sectoral scope ¹	03 – Energy demand
Project activity type	Type II – Energy Efficiency Improvement Project

Complete the table below with information relevant for AFOLU projects:

Sectoral scope	N/A
AFOLU project category ²	N/A
Project activity type	N/A

1.4 Project Proponent

Organization name	SDG13 Ventures Pte Ltd
Contact person	Ankit Mathur
Title	Director
Address	100 Peck Seah Street #10-18 PS100 Singapore 079333
Telephone	+65 6962 0655

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>

² See Appendix 1 of the VCS Standard

Email	sdg13ventures@gmail.com
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1.5 Other Entities Involved in the Project

Organization name	Vertree Environmental Development Limited (formerly Hartree Environmental Development Limited. Name changed on 20 March 2023)
Role in the project	Investor and carbon credit offtaker
Contact person	Vertree Upstream Team
Title	Not applicable
Address	2nd Floor Cardinal Place West Building, 100 Victoria Street, London, United Kingdom, SW1E 5JL
Telephone	+44 20 7201 7134
Email	info@vertree.earth

1.6 Project Start Date

Project start date	01-June-2022
Justification	This is the date when the first batch of ICS was commissioned.

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	01-June-2022 to 31-May -2032

1.8 Project Location

The grouped project is implemented in the state of Odisha in India. The project boundary is defined by the following GPS coordinates:

North – 22° 31' 14.015" N & 86° 01' 14.596" E

South – 17° 50' 1.134" N & 81° 25' 16.829" E

West – 21° 06' 22.496" N & 82° 38' 14.607" E

East – 20° 41' 44.569" N & 86° 54' 53.871" E



Figure 2: Map of the project location –Odisha, India

1.9 Title and Reference of Methodology

Type (methodology, tool or module).	Reference ID, if applicable	Title	Version
Methodology	VMR0006	VMR0006 Methodology for Installation of High Efficiency Firewood Cookstoves	1.1
Tool	TOOL01	TOOL01: Tool for the demonstration and assessment of additionality; EB70	7.0
Tool	TOOL30	TOOL30: Calculation of the fraction of non-renewable biomass; EB 108, Annex 11	3.0
Standard	CDM-EB50-A30-STAN	Sampling and surveys for CDM project activities and programmes of activities	9.0

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

Was 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

1.12 Sustainable Development Contributions

The project involved the distribution of 102,223 improved cookstove till the current monitoring period, across 27 districts in Odisha. The beneficiary households of the Improved Cookstoves, are scattered across rural and peri-urban areas in Odisha, and have been using traditional mud-stoves (the baseline device) prior to project implementation. The project device, an Improved Cookstove replaces the baseline device, and delivers multiple co-benefits apart from reduced carbon dioxide emissions.



Figure 3: Beneficiaries of the project with Greenway Jumbo cookstove

The ICS being used in this project is the Greenway Jumbo stove, which has an average combustion efficiency of 38%, compared to baseline devices. The increased efficiency of biomass combustion results in reduced demand for biomass to meet cooking energy requirements. (SDG 13.2.2) Some of the other co-benefits of this project are:

- Decreased risk of pulmonary health diseases, particularly among the women, elderly and children of the households (SDG 3.4.1)
- Lowered mortality rate in beneficiary households (SDG 3.9.1)
- Decreased time spent on cooking and fuelwood collection, and more time on other economic opportunities and education (SDG 5.4.1)
- Increased employment opportunities provided for local communities during the project implementation (SDG 8.3.1)
- Involvement of local women in the project implementation and increasing opportunities for female participation in the workforce (SDG 10.2.1)
- Increased proportion of population using clean cooking technology (SDG 7.1.2)
- Facilitation of knowledge and skill transfer to project implementation partners in the form of training programmes for demonstration and awareness events, provided by the project proponent throughout the year (SDG 8.2.1)

In addition to the above SDGs, the project also contributes to measures that align with the eradication of extreme poverty, by promoting economic empowerment and reducing the financial burden on low-income households through the usage of cost-saving technology, i.e., the ICS.



Figure 4: A project beneficiary using the Greenway improved cookstove

The project activities in the monitoring period contributes to at least 7 different SDGs:



Figure 5: Sustainable development contributions under different SDGs by the project activity

The sustainable development contributions of the project in this monitoring period under different SDG targets and indicators have been provided in Table 2. Evidence of the project's sustainable development contributions have been provided in Appendix I.

Table 1: Sustainable Development Contributions

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
1)	1.4	1.4.1 Proportion of population living in households with access to basic services	Implemented activity to increase access of households to clean cooking as a basic service through increased investment	Increased investment in clean cooking technology by the PP has enabled greater access to this basic service to 100,001 rural and semi-urban households within the project boundary. The current estimates of Odisha population peg it at 48.8 million. Therefore ~0.20% of Odisha population gained access to clean cooking as a basic service during the current monitoring period ³ .	Increased investment in clean cooking technology by the PP has enabled greater access to basic clean cooking service to 102,223 rural and semi-urban households within the project boundary, over the lifetime of the project. The current estimates of Odisha population peg it at 48.8 million ⁴ . Accordingly, the proportion of the population in the project boundary with access to clean cooking as a basic service increased by approximately 0.21% as a result of this project activity.

³ <https://www.census2011.co.in/census/state/orissa.html>

⁴ <https://www.census2011.co.in/census/state/orissa.html>

2)	3.4	3.4.1 Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease	Implemented activity to decrease the mortality rates associated with chronic respiratory disease	The project activity reduced the risk of mortality attributed to chronic respiratory disease of beneficiaries, through decreasing household air pollution owing to the use of the distributed ICS for cooking.	The project activity has reduced the risk of mortality attributed to chronic respiratory disease of beneficiaries, through decreasing the household air pollution owing to the use of the distributed ICS for cooking.
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Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
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3)	3.9	3.9.1 Mortality rate attributed to household and ambient air pollution	Implemented activity to decrease household air pollution through use of ICS among the beneficiary households	Till the current monitoring period, distribution of ICS has resulted in reduction of household air pollution in 100,001 households, and thereby mortality rate attributed to household air pollution has also decreased.	The project has reduced indoor air pollution in 102,223 households by facilitating access and use of ICS.
4)	5.4	5.4.1 Proportion of time spent on unpaid domestics and care work, by sex, age and location	Implemented activity to decrease time spent on cooking by women members of the households under the project	During the current monitoring period, women members of the beneficiary households have experienced a reduction in time spent on cooking and fuelwood collection due to lesser amount of fuelwood requirement for cooking on ICS. They have saved an average of 2.31 hours daily from spending on cooking and 4.18 hours per week in fuelwood collection, and have been able to engage in other employment opportunities.	Women members of the households under the project have seen a massive reduction in both the amount of fuelwood required for cooking (which resulted in lesser time spent on collecting fuelwood), and the amount of time taken for cooking. An average of more than 2 hours per day on cooking and more than 4 hours per week in fuelwood collection was saved, respectively. As a result of this, they also have time to engage in other employment opportunities.

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
5)	7.1	7.1.2 Proportion of population with primary reliance on clean fuels and technology	Implemented activity to increase the proportion of population with primary reliance on clean technology	Till the current monitoring period, 100,001 ICS have replaced the use of baseline inefficient cookstoves. It has resulted in an increase in population with reliance on clean technology. The current estimates of Odisha population peg it at 48.8 million ⁵ . Therefore ~0.20% increase in proportion with primary reliance on clean fuels/technology during the current monitoring period.	The project has benefitted 102,223 households by making clean ICS available, through distribution of 102,223 improved cookstoves. The current estimates of Odisha population peg it at 48.8 million ⁶ . Accordingly, the proportion of the population in the project boundary with access to clean technology for cooking increased by approximately 0.21% as a result of this project activity.

⁵ <https://www.census2011.co.in/census/state/orissa.html>

⁶ <https://www.census2011.co.in/census/state/orissa.html>

6)	8.3	8.3.1 Proportion of informal unemployment in total employment, by sector and sex	Implemented activity to increase the proportion of informal employment	For the smooth implementation of the various phases of the project, a total of 15 people based in and around the project areas have been employed during the current monitoring period, thus generating employment within the local communities.	The project has generated employment within the local communities in and around the project areas. More than 36 local people have been employed across the lifetime of the project.
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Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
7)	10.1	10.1.1 Growth rates in household expenditure or income per capita among the bottom 40 percent of the population	Implemented activity to increase income per capita amongst the beneficiary households through financial and time savings	Access to and use of project ICS among the households, has increased the financial savings through reduction in fuelwood purchase and time savings through reduction in time spent for fuelwood collection	Access to and use of project ICS among the target households (102,223) has increased the financial savings through reduction in fuelwood purchase and time savings through reduction in time spent for fuelwood collection. Via targeted selection of recipient households, the project activity enables income growth for the lower income brackets. Through the surveyed households, it was found that an average of INR 372 was saved each month per household.

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
8)	10.2	10.2.1 Proportion of people living below 50 percent of median income, by sex, age and persons with disabilities	Implemented activity to increase employment	During the current monitoring period, 3 local female partners during the current monitoring period, have been employed in the project implementation. The current estimates of Odisha population peg it at 48.8 million ~0.000006% decrease in proportion living below 50% of median income during the current monitoring period ⁷ .	More than 10 local female partners have been employed in the project implementation throughout the lifetime, which has increased the opportunity for female participation in the workforce and achieved income growth. The current estimates of Odisha population peg it at 48.8 million ⁸ . Accordingly, the proportion of the population living below 50 percent of median income decreased by approximately 0.00002% as a result of this project activity.

⁷ <https://www.census2011.co.in/census/state/orissa.html>

⁸ <https://www.census2011.co.in/census/state/orissa.html>

Row number	SDG target	SDG indicator	Net impact on SDG indicator	Current project contributions	Contributions over project lifetime
9)	13.2	13.2.2 Total greenhouse gas emissions avoided or removed per year	Implemented activity to result in decrease of greenhouse gas emissions	Through distribution of Improved Cookstoves, which have replaced the use of inefficient traditional cookstoves, the project has prevented release of 515,782 tonnes of CO2 in the atmosphere during the monitoring period.	The project has prevented the release of 1,330,409 tonnes of CO2 into the atmosphere up to the current monitoring period.

1.13 Commercially Sensitive Information

No commercially sensitive information has been excluded from the monitoring report.

2 SAFEGUARDS AND STAKEHOLDER ENGAGEMENT

2.1 Stakeholder Engagement and Consultation

2.1.1 Stakeholder Identification

Stakeholder Identification

The stakeholders were identified by mapping out the potential ICS users, relevant government bodies, NGOs and agencies who were either directly impacted or had the direct/indirect relation with our project activity. The relevant stakeholders included government bodies such as the Ministry of Environment, Forests and Climate Change (MoEFCC) and Ministry of New and Renewable Energy (MNRE), given their regulatory oversight and interest in environmental and resource management. Additionally, we identified research institutions specializing in environmental studies and sustainable development, to ensure their validation of our project activities. We have reached out to these stakeholders via email. The list of stakeholders are as follows:

Name of stakeholder
Shakti Sustainable Energy Foundation
Rashtriya Mahila Kosh
Women's India Trust
Ministry of New and Renewable Energy (MNRE)
Saath Charitable Trust
Manav Sadhna
Ministry of rural development
Greenway Grameen Infra Pvt Ltd
Pradan
Social Action for Rural Development (SARDA)
Self Employed Women's Association
Shramik Bharti
Centre for Science and Environment (CSE)
Council on Energy, Environment and Water (CEEW)

	Ministry of Environment, Forest and Climate Change (MoEFCC)
	TERI - The Energy and Resources Institute
	CRY Welfare and Charity Foundation
	Sustainable Community Base Approaches for Nation Enhancement
	Chintan Environmental Research and Action group
	Potential ICS users and surrounding villagers/communities
Legal or customary tenure/access rights	Not applicable, since the beneficiary households of the project have been provided with an improved cookstove for their personal, private use. Hence, there are no conflicting rights.
Stakeholder diversity and changes over time	The stakeholders have been selected come from diverse backgrounds - they include government bodies, research institutions, NGOs, rural organizations and self-help groups, contributing critical insights and different perspectives into our project activities. There has not been any change to stakeholder diversity, The involvement of local community institutions has been crucial for ensuring the project's social acceptance and success. By including local NGOs and women's groups, we have incorporated voices from grassroots organizations dedicated to community development and empowerment.
Expected changes in well-being	The project has positively impacted their lives by reducing smoke emissions and fuelwood consumption. Over time, the stakeholders have experienced improved well-being, fostering contentment within the tribal communities. Beneficiaries of the project can expect enhanced well-being through reduced drudgery in firewood collection, significant fuel savings, improved indoor air quality, health improvements and faster cooking times.
Location of stakeholders	The stakeholders of this project are located in India and the local stakeholders are located in the rural and peri-

	urban areas of Odisha. The socio-economically poor sections of the society are targeted in the project activities.
Location of resources	Not applicable, since this is an improved cookstove project.

2.1.2 Stakeholder Consultation and Ongoing Communication

Ongoing consultation	The project proponent took all appropriate measures and followed due process for communicating with, and informing the stakeholders about the project before verification and during this monitoring period through multiple awareness events and product demonstrations. These community product demonstration events are regularly conducted in the project location where concerned stakeholders are consulted. Any grievances arising from the usage of the ICS devices are recorded by the field team members (Grameen Sahayaks or Cluster Incharges) and are promptly acknowledged. Apart from in-person engagement the project proponent has also provided a customer care number +91-7861098770 and an email contact@greenwayappliances.com to the beneficiaries. The grievance redressal flowchart is attached in Appendix VI of this report.
Date(s) of stakeholder consultation	The local stakeholder consultation was conducted on 15/12/2021 at Adhikar Microfinance Pvt. Ltd. in Kalinga Nagar, Bhubaneswar, Odisha. Additionally, PP also conducted awareness programs to engage with the community during the monitoring period. These programs led to feedback exchange and some comments from the beneficiaries, which were addressed. The dates on which this feedback were received are: 30-10-2024 in Sundergarh, Odisha and 06-01-2025 in Angul, Odisha.
Communication of monitored results	Stakeholders are communicated about the monitored results through engagement events that are conducted from time to time in the project location. These events are demonstration events where the beneficiaries are informed about the fuel savings, positive climate impact and time savings due to the project activity.

Consultation records

Attendance records, photos of the meeting and stakeholder feedback are recorded during the demonstration and outreach events.



Stakeholder input

Stakeholders were encouraged to ask questions regarding the project activities and provide their feedback, prior to verification. All questions raised by stakeholders were answered and documented by the PP and their representatives. No negative comments or suggestions on the proposed project activity were raised by any stakeholders during the meeting which could have any significant modification in the project description or its design. All the stakeholders expressed their satisfaction

	with the project activity and appreciated the societal and environmental benefits associated with it. A summary of the feedback from interactions on 30-10-2024 in the districts of Sundergarh, Odisha and on 06-01-2025 in Angul, Odisha, are as follows: • Beneficiaries wanted to know when PP will be distributing more stoves to them as they have been getting queries from other community members / neighbours who want to use the stove • Beneficiaries wanted to understand how to maintain the stoves • Beneficiaries wanted to understand how to get better performance from the stove and ensure longevity of the product In response the PP: • Explained that the distribution of improved cookstoves is carried out in planned phases based on project design. Community members were informed that any future distribution rounds would be communicated in advance through local coordinators. The PP assured beneficiaries that efforts are ongoing to mobilize additional resources in order that more households can benefit from the improved cookstoves in future phases. • The PP clarified that the improved cookstoves require only simple, routine maintenance to ensure performance and long life. Beneficiaries were advised to regularly remove ash buildup, prevent water on the device, and use dry wood to maintain efficient combustion. Practical demonstrations were provided to households to drive the point.
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2.1.3 Free, Prior, and Informed Consent

Consent	Stakeholders were informed and their consent was obtained for the stakeholder consultation meeting(s) through written notices published in local newspapers prior to the meetings. The pre-project local stakeholder consultation for the grouped project activity was organized on 03/05/2021 at Mahua Vann Resort, in Kuppitola Village, Seoni district,
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	Madhya Pradesh, from 11am to 2pm. All interested stakeholders from the group including traditional cookstove users, NGO representatives, field assistants working on the project, and local leaders attended the meeting. All parties were fully informed and voluntarily agreed to participate in the meetings. During the sessions, we provided detailed information about the project's objectives, potential impacts, and benefits, using culturally appropriate communication methods to ensure understanding. We facilitated open discussions, allowing community members to voice their concerns and preferences. To respect customary rights, we engaged with local leaders and elders, obtaining their approval and ensuring their perspectives were integrated into the project design. A continuous grievance mechanism has also been established which was communicated to the local stakeholders, along with the contact information of the project representatives.
Outcome of FPIC	The project activity has not encroached on land, relocated people, forced physical or economic displacement without consent, since consent was obtained from all relevant stakeholders.



Figure 5: Continuous engagement with the stakeholders and beneficiaries of the project

2.1.4 Grievance Redress Procedure

Date	Grievances received	Resolution and outcome
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19-08-2024	Suita Soy, J22VE039819 , Sundergarh: The fuel tray of the stove had rusted.	The fuel tray of the cook stove was replaced.
07-09-2024	Haripriya Sahu, J23VB409465 , Sambhalpur: A beneficiary received a cookstove which had bent fuel tray.	The beneficiary was provided with another new cookstove and the defective product was replaced.
12-12-2024	Urmila Sahu, J22VG114837 , Angul: A beneficiary received the stove with damaged packaging and a dent on the outer casing of the stove.	The beneficiary was provided with a replacement of the dented cookstove.
21-02-2025	Priyanka Kerkatta, J23VD012815 , Sundergarh: The stove handles came off.	The stove handles were replaced on the cookstove.
30-05-2025	Babuli Jena, J23VH170456 , Nayagarh: The screws in the outer casing of the stove came off.	The threading of the screw was repaired and outer casing of the stove was fixed.

2.1.5 Public Comments

No comments were received.

Summary of comments received	Actions taken

2.2 Risks to Stakeholders and the Environment

2.2.1 Management Experience

At SDG13 Ventures Pte Ltd, our management team brings extensive expertise in implementing large-scale clean cooking and carbon projects, having successfully executed multiple cookstove distribution initiatives across diverse methodologies and standards since 2020. These projects span India and several other countries, collectively impacting around one million households. Our experience covers the full lifecycle of project development, including carbon compliance, implementation, monitoring, and reporting. We have established strong governance structures and operational systems to ensure efficient project delivery and accountability. In most of our projects, monitoring and field verification have been carried out by our in-house ground teams, while in select cases, we have engaged specialized external partners to enhance coverage and

quality. This combination of internal capability and partnerships enables us to manage complex, community-based projects while maintaining the necessary compliances.

2.2.2 Risk assessment

	Risk identified	Mitigation or preventative measure(s) taken
Risks to stakeholder participation	No risks identified	All stakeholders were notified via public newspapers and were welcome to participate in the stakeholder consultation meetings.
Working conditions	No risks identified	The working conditions provided to the ground team employed for the project are in accordance with the laws of the land.
Safety of women and girls	No risks identified	Awareness and training are provided regarding the prevention of sexual harassment at regular intervals to all ground team members.
Safety of minority and marginalized groups, including children	No risks identified	The project activities do not pose any risk to minorities or marginalized groups. In fact, it uplifts them by ensuring better access to cleaner cooking technology.
Pollutants (air, noise, discharges to water, generation of waste, release of hazardous materials)	No risks identified	The project activity provides clean cooking technology; hence it does not create any pollution in the project area.

2.3 Respect for Human Rights and Equity

2.3.1 Labor and Work

Discrimination and sexual harassment	No discrimination or sexual harassment have been reported to occur in the monitoring period. Awareness and training regarding prevention of sexual harassment are continuously provided to the ground team members.
Management experience	The project developer has developed projects that have successfully undergone multiple verifications.
Gender equity in labor and work	Equal opportunity is provided for work. Equal pay and wages have been provided to all employees, irrespective of gender. The project has given employment to 3 women during the monitoring period.

Human trafficking, forced labor, and child labor	The project does not use victims of human trafficking, forced labor, and child labor and follows a strict onboarding procedure compliant with the laws of the land.
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2.3.2 Human Rights

The project activities are compliant with all applicable human right laws, and during the project activity, there has been no recorded cases where human rights were infringed upon by the project participant.

Risks identified	Mitigation or preventative measure(s) taken

2.3.3 Indigenous Peoples and Cultural Heritage

The project activities do not interfere with any indigenous people's cultures, traditions and lifestyles. In fact, the project ensures that these indigenous groups have access to better technologies such as improved cooking technologies to improve their overall well-being.

Risks identified	Mitigation(s) or preventative measure taken

2.3.4 Property Rights

Disputes over rights to territories and resources	Not applicable
Respect for property rights	Not applicable, as the project activity involves dissemination of improved cookstoves which minimizes smoke emissions and reduces the accumulation of soot in the kitchen walls. There is no property involved.

Risks identified	Mitigation or preventative measure(s) taken

2.3.5 Benefit Sharing

Summary of the benefit sharing plan	Not applicable, as the project involves distribution of improved cookstoves.
Benefit sharing during the monitoring period	Not applicable

2.4 Ecosystem Health

	Risk identified	Mitigation or preventative measure(s) taken during the monitoring period
Impacts on biodiversity and ecosystems	No risk identified	The project activities do not interfere or encroach upon any floral or faunal species in the project areas, hence there are no risks imposed on biodiversity.
Soil degradation and soil erosion	No risk identified	The project activities do not lead to any soil degradation and soil erosion.
Water consumption and stress	No risk identified	The project activities are related to providing technologies for cleaner cooking and do not consume any water.
Usage of fertilizers	No risk identified	The project activities do not involve the usage of any fertilizers.

2.4.1 Rare, Threatened, and Endangered species

The activities in this project do not affect any rare, threatened and endangered species, hence, it is not applicable.

2.4.2 Introduction of species

Species introduced	Classification	Justification for use	Adverse effects and mitigation
N/A	N/A	N/A	N/A
Existing invasive species	Mitigation measures to prevent the spread or continued existence of invasive species		
N/A	N/A		

2.4.3 Ecosystem conversion

Not applicable, since this is an Improved Cookstove project.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project implementation involves distribution and continuous monitoring of ICS in various districts of Odisha. During the monitoring there have been no changes to the project proponent or other entities. The specifications of the ICS are mentioned in Table 3. The project implementation of the project has also involved engaging local people from the communities in and around the project areas as ground operations team members. The ground team has used a mobile based application called TRACE for monitoring the impact of the project in selected beneficiary households, screenshots of the application are shown in Figure 7. The monitored data can be accessed and verified as and when needed. The ground team members were trained to distribute the ICS devices, collect beneficiary data, conduct product demonstrations, and train the end users for proper usage of the ICS. The end users were also provided with contact details of the support team person to connect with in cases of any complaints or feedback.

Table 3: Specifications of the ICS - Greenway Jumbo Stove

Size:	12" x 11.4" x 11.6"
Net weight:	3.75 kg
Loading capacity:	40 kg
Primary raw materials:	Stainless steel and aluminum



Figure 6: The Greenway Jumbo ICS

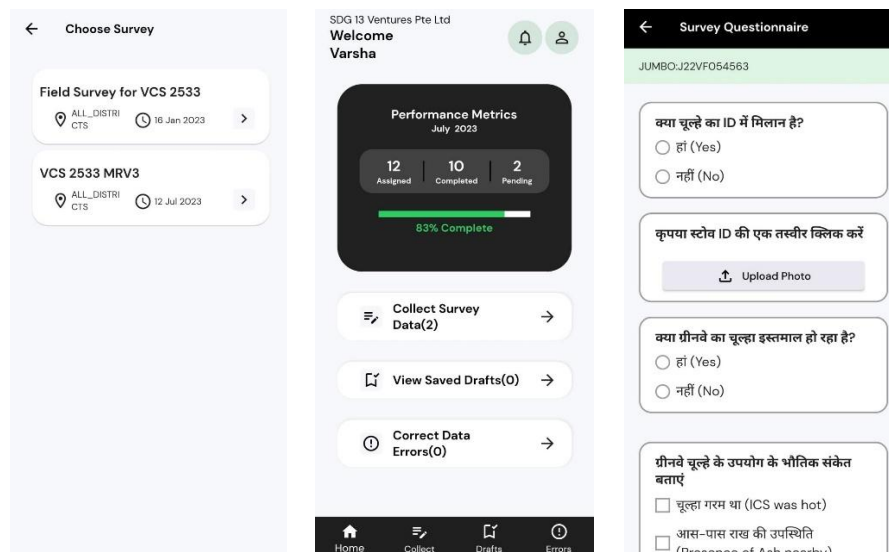


Figure 7: Screenshots of the TRACE application mobile application used for the monitoring survey

No incidents were observed during the current monitoring period which negatively impact the emission reduction calculations. All the ICSs were found to be operational, and no breakdown of the stoves were observed.

The project activity has been implemented and operated as per the registered PD. The project team is structured as per the functions that are carried out viz. Project Management, Ground Operations, Data Management and Carbon Compliance (Figure 8). The team members part of these functions and their roles have been elaborated in Table 4. Training sessions are held from time to time for the implementation team. A list of training sessions conducted during the current monitoring period have been attached in Appendix V.

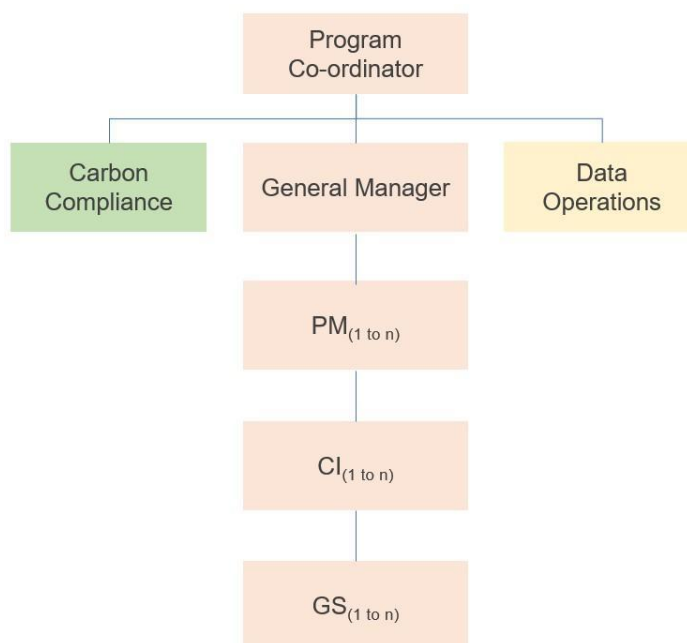


Figure 8: Project structure and the associated hierarchy

Table 4: Project team members and their roles as per the project structure

Project division	Team member(s)	Responsibility
Project Management	Program Coordinator	- Supervises the overall implementation of the project, while ensuring that the necessary compliances are being met - Works with internal and external stakeholders involved in the project.
	General Manager (GM)	- Oversees the distribution plans of the Project Managers (PMs) in the entire project boundary - Ensures that Cluster Incharges (CIs) and Grameen Sahayaks (GSs) are efficiently trained to deliver on the requirements of the project - Supervises all the operational and carbon compliance activities for the project.
Ground Operations	Project Manager (PM)	- Supervises distribution and monitoring campaigns across multiple districts under the project boundary - Prepares a distribution plan with the CIs and demarcates the distribution area for each GS.
	Cluster In-charge (CI)	- Manages the GSs for supervised execution of the project implementation process - Communicates and coordinates between the PMs and CIs - Involved in awareness generation and

		monitoring activities along with the GSs 4. Verify and pass on (to the Data team) the end-user information, carbon-waiver agreements and other documents collected by the GSs.
	Grameen Sahayak (GS)	1. Primary link to the customers 2. Distribute and monitor the stoves, collect the end-user information and train the users to use the stoves efficiently 3. Address the customer grievances as and when they arise.
Data Management	Data team Manager & Data verification officers	1. Oversees proper functioning of the data systems and database 2. Ensures that the user data record is updated and verified.
Carbon Compliance	Project Consultant & Carbon Associates	1. Ensure that the project complies to the methodological requirements of the carbon registry under which the project is listed.





Figure 9: The implementation team and its outreach to the last mile beneficiaries

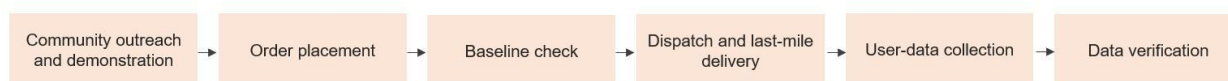


Figure 10: Steps involved in the distribution process

The distribution system of the PP is mapped out in six steps which starts with outreach conducted to the identified beneficiaries/end users of the ICS, followed by placement of stove orders upon receiving them and recording them in the database. Baseline conformity checks are conducted as required on the households and project locations, which is followed by deployment of ICS from the factory to the households. A database is maintained to ensure streamlining; quality and integrity of the data that is being collected on the beneficiary households and deployed stoves. The steps involved in the distribution process of the project implementation are elaborated in Appendix II.

3.2 Deviations

3.2.1 Methodology Deviations

- There have been no deviations from the methodology during the current monitoring period.

3.2.2 Project Description Deviations

- There have been no deviations from project description during the current monitoring period.

3.3 Grouped Projects

Project activity instances in the current monitoring period have already been covered during validation and registration of the project and meets all the eligibility requirements. All units added are part of the registered grouped project with an envisaged distribution of 100,000 ICS devices per year in phased manner over 5 years. No new project activity instances have been added during the current monitoring period under the grouped project.

Table 5: Eligibility criteria for grouped projects

Sl. No.	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion
1.	The geographical boundary of the project instances including any time- induced boundary consistent with the geographical boundary set in the Project Description.	The project boundary corresponds to the boundaries of the host country India. All the distributed ICS in a project instance shall be located within the geographical boundary of India.	In the project, ICS has been distributed in various districts of the state of Odisha, India. The same can be checked through distribution records and end user agreements. Hence, eligibility criteria are met.
2.	Conditions that avoid double counting of emission reductions like unique identification of product and end user locations.	A unique numbering system for the ICS will be applied in each project instance, assigning a unique number to each ICS and allowing for clear identification for each ICS to which project instance/cluster it belongs.	Each ICS distributed has a unique identity and corresponding end user details (name, address, etc.) are duly recorded. Additionally, unique ID of the ICS is displayed on the stove itself. The unique identification of the ICS can be verified and hence, eligibility criteria is met.
3.	The specifications of the technology/measure, including the level and type of service, performance specifications including compliance with testing/certifications.	Project will consist of the distribution of ICS with a thermal efficiency of at least 25%, as per Water Boiling Test or compliance with Tier II and above as per ISO, to household users cooking with non-renewable biomass in the baseline scenario. The project instances will involve replacement of conventional firewood cookstoves for biomass fired ICS as defined in the VCS PD. Stove types replaced and implemented is	The PP has distributed single pot Greenway Jumbo cookstoves having a certified efficiency of 38%. Hence, eligibility criteria are met.

Sl. No.	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion
		defined in the VCS PD, and hence appliances will involve the efficiency improvements in the thermal applications of non-renewable biomass as per VMR006.	
4.	The conditions that ensure that the project instances meet the requirements pertaining to the demonstration of additionality.	The project must have characteristics with respect to the additionality requirements that are consistent with the initial instances for the specified project activity and geographical area.	The additionality is determined using the financial barrier option in line with the applied approved methodology, VMR006. Step 1: The project implementation is not mandated by any government policy or regulation in the host country, India. Step 2: Not applicable Step 3: As the PP has sold ICS at more than 60% subsidy, hence the return from the project is negative and sale of VERs will help in funding gap. Hence, project activity is additional. Hence, eligibility criteria are met.
5.	Where applicable, the conditions related to sampling requirements for the project in accordance with the “Standard for sampling and surveys for CDM project activities and Programme of Activities”.	Monitoring will adhere to all the requirements related to sampling for a project instance, in accordance with the sampling guidelines including all the annexes and	Specification of the sampling methods applied and compliance with the sampling requirements are established in the PD. The sampling has been undertaken as per the sampling plan in the PD.

Sl. No.	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion
		amendments till EB 86 Annex 04 and "Sampling and surveys for CDM project activities and Programme of Activities", version 09.0	Hence, eligibility criteria are met.
6.	VER ownership	End users receiving ICS under the specific project instances contractually cede their rights to claim and own emission reductions under the VCS of the PP of the project.	A default distribution agreement for end users including the provision that emission reductions generated from the use of the ICS are owned by the PP is duly informed to and signed by each individual end user. The same can be checked by the VVB.
7.	Methodology adoption	The project instances under this grouped project shall use VCS approved methodology – VMR0006: Methodology for Installation of High Efficiency Firewood Cookstoves, v1.1 and shall follow its requirements	The project instance under verification is first instance and meets all the applicability condition of VMR0006 v1.1, the same is being validated during registration of grouped project activity.
8.	Start date for inclusion	The start date of the project instance under this grouped project shall be same as or later than the grouped project start date	The start date of the project instance is 1 June 2022.
9	Where a capacity limit applies to a project activity included in the project, no Project instance shall exceed such limit. Further, no single cluster of project activity instances shall exceed the capacity limit, determined as follows:	The grouped project does not have any specified capacity limits applicable, since there are no capacity limits defined within the applied methodology, VMR0006, ver. 1.1.	Not applicable.

Sl. No.	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion
	Each device that exceeds one percent of the capacity limit shall be identified. Such instances shall be divided into clusters, whereby each cluster is comprised of any system of instances such that each instance is within one kilometer of at least one other instance in the cluster. Instances that are not within one kilometer of any other instance shall not be assigned to clusters. None of the clusters shall exceed the capacity limit and no further project activity instances shall be added to the project that would cause any of the clusters to exceed the capacity limit	Therefore, this eligibility criteria is not applicable.	
10	Conditions to provide an affirmation that funding from Annex I parties, if any, does not result in a diversion of official development assistance	The new project instance shall be required to provide an affirmation that funding from annex I parties, if any, does not result in a diversion of official development assistance	For this instance, no funding from Annex-1 parties is received and hence, no ODA declaration is required.
11	The Group project- specific requirements stipulated by the project proponent including any conditions related to undertaking local stakeholder consultations and environmental impact analysis	The local stakeholder consultation conducted at group PD level and validated during registration. Each new project instance/project will be implemented in similar social economic situations. The key stakeholders of the program both at group project activity and new project instance level are the	The local stakeholder consultation done at grouped project level and no further action needed. The project instance under current periodic verification is validated as first actual instance.

Sl. No.	Eligibility criterion - Category	Eligibility criterion - Required condition	Supporting evidence for inclusion
		same. No further actions needed at the new project instance level to satisfy the eligibility criteria.	
12	Have a start date that is the same as or later than the grouped project start date	All future instances shall have the start date after the date of first instance.	The project instance under verification is first instance and start date of this project instance is same as start date of grouped project.
13	Applicability of VCS methodology	All future instances shall fulfil all-applicability criteria of VCS methodology VMR0006, v1.1.	The project instance under verification is first instance and meets all the applicability condition of VMR0006 V1.1, the same is being validated during registration of grouped project activity.
14	Baseline	The new instance shall adhere the baseline requirements of the VMR0006, v1.1.	The project instance under verification is first instance and baseline is already established in line with VMR0006 V1.1 as use of wood based traditional stoves, the same is being validated during registration of grouped project activity.
15	Be eligible for crediting from the start date of the project activity instance through to the end of the project crediting period (only).	The project instance will be only eligible for the crediting from its start date through to the end of the project crediting period (only).	The crediting period of project instance under verification is start date of project instance.
16	Not be or have been enrolled in another VCS project	No project instance to be included which is part of other grouped or standalone VCS project	The project instance under verification is first instance included under grouped project and is not registered under any other grouped or standalone VCS project. A declaration regarding same is being provided to VVB.

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	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 value as per applied approved methodology VMR0006, v1.1
Value applied	0.0156
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,CO2}
Data unit	tCO ₂ /TJ
Description	CO ₂ emission factor for the use of wood fuel in baseline scenario
Source of data	Default value 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 CO2}
Data unit	tCO ₂ /TJ
Description	The non-CO ₂ emission factor for the use of wood fuel in baseline scenario

Source of data	Default value 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	η_{old}
Fraction	Fraction
Description	Efficiency of baseline cookstove
Source of data	Default value as per applied approved methodology VMR0006, v1.1
Value applied	10%
Justification of choice of data or description of measurement methods and procedures applied	A default value of 0.1 shall be used if baseline device is a three-stone fire using firewood (not charcoal), or a conventional device with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney
Purpose of data	Calculation of baseline emissions
Comments	The value is fixed ex-ante

Data / Parameter	η_P
Fraction	Fraction
Description	Efficiency of project stove at the start of project activity
Source of data	Manufacturer specification
Value applied	0.38
Justification of choice of data or description of measurement methods and procedures applied	The parameter shall be determined ex-ante
Purpose of data	Calculation of $\eta_{y,i,j}$
Comments	The value is fixed ex-ante

Data / Parameter	fNRB
Fraction	Fraction
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 as per TOOL30 "Calculation of the fraction of non-renewable biomass", Version-04
Value applied	0.714
Justification of choice of data or description of measurement methods and procedures applied	The value established using the latest information available in the public domain is implemented and will be fixed ex-ante. The fNRB value is established using as per the methodological tool 30 "calculation of fraction of non-renewable biomass" V04.0
Purpose of data	Calculation of baseline emissions
Comments	The value is fixed ex-ante

4.2 Data and Parameters Monitored

Data / Parameter	$N_{y,l,j}$
Data unit	Number
Description	Number of project devices of type l and batch j operating during year y
Source of data	Monitoring survey
Description of measurement methods and procedures to be applied	Monitored based on a representative sample through a survey. Sampling standard has been 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. The sample size calculated as per required confidence and precision level is 43 (rounded up value), however PP has considered 230 samples, which is conservative. The project achieves the required precision level with 100% devices in use.
Frequency of monitoring/recording	At least once every two years
Value monitored	100,001
Monitoring equipment	Monitoring survey
QA/QC procedures to be applied	The project implementer shall maintain a distribution record to calculate this parameter. The survey conducted during the current monitoring period reveals 97.8% ICS were operational.

Purpose of the 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	--

Data / Parameter	$B_{y=1,new,i,j,survey}$
Data unit	Tonnes/household/year
Description	Annual quantity of woody biomass used by improved cookstoves in tonnes per device of type i and batch j, determined in the first year of the implementation of the project through a sample survey.
Source of data	Monitoring survey
Description of measurement methods and procedures to be applied	Kitchen Performance Test (KPT) was conducted in line with the Standard for sampling and surveys for CDM project activities and programme of activities or guidelines provided in methodology Section 8.4 Option (b).
Frequency of monitoring/recording	Determined in the first year of project implementation
Value monitored	1.406
Monitoring equipment	Monitoring survey
QA/QC procedures to be applied	N/A
Purpose of the data	Calculation of baseline emissions
Calculation method	Kitchen Performance Test was conducted across 25 sample households to record the daily fuelwood consumption in kg/household/day. The average consumption value across the 25 households were converted to tonnes/household/year. Kitchen Performance Test was conducted across 25 sample households which were selected using simple random sampling method as outlined in the guideline - Sampling and surveys for CDM project activities and programmes of activities, v9,0 to record the daily fuelwood consumption in kg/household/day. All of the ICS devices were in the "0-1" age group as the KPT was conducted in the first year of project implementation. The average consumption value across the 25 households were converted to

	tonnes/household/year. The region-wise distribution of the samples are as follows:																
	<table> <tr> <th>District</th><th>No. of samples</th></tr> <tr> <td>Sundargarh</td><td>3</td></tr> <tr> <td>Sundergarh</td><td>8</td></tr> <tr> <td>Khordha</td><td>6</td></tr> <tr> <td>Dhenkanal</td><td>2</td></tr> <tr> <td>Debagarh</td><td>3</td></tr> <tr> <td>Deogarh</td><td>2</td></tr> <tr> <td>Puri</td><td>1</td></tr> </table>	District	No. of samples	Sundargarh	3	Sundergarh	8	Khordha	6	Dhenkanal	2	Debagarh	3	Deogarh	2	Puri	1
District	No. of samples																
Sundargarh	3																
Sundergarh	8																
Khordha	6																
Dhenkanal	2																
Debagarh	3																
Deogarh	2																
Puri	1																
Comments	1) The value used here has been monitored in the first year of project implementation. The KPT measurement campaign was conducted from 22 December, 2022 to 06 January, 2023. 2) The methodology VMR0006, v1.1 required the $B_{y=1,new,i,j,survey}$ to be monitored at the first year of implementation. Therefore, the KPTs were undertaken within a year of implementation of project and thus complies the requirement. However, the VMR0006, v1.1, doesn't specify the requirement of KPT rather states the sample survey, but undertaking the KPT test is more accurate and reliable than the sample survey.																

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 Certification by a national standards body or an appropriate certifying agent recognized by that body
Description of measurement methods and procedures to be applied	To adopt Option V given in the methodology: "Efficiency of the improved cookstoves to be estimated using equation 5 of applied approved methodology where loss in efficiency per year is calculated, and therefore this parameter does not need to be monitored"
Frequency of monitoring/recording	Annual

Value monitored	0.38 at start of operation Year 1= 0.357 Year 2=0.354 Year 3=0.350 Year 4=0.347 Year 5=0.343 Year 6= 0.340 Year 7= 0.336 Year 8= 0.332 Year 9= 0.329 Year 10= 0.326
Monitoring equipment	N/A
QA/QC procedures to be applied	N/A
Purpose of the data	Calculation of baseline emissions
Calculation method	As per equation (5) of VMR0006, v1.1 $\eta_{new,ij} = \eta_P \times (DF_n)^{y-1} \times 0.94$
Comments	For the current monitoring period, a efficiency of 0.357 has been used for stoves in age group 0-1 and 0.354 has been used for stoves in age group 1-2.

Data / Parameter	Life Span
Data unit	Years
Description	The operating lifetime of the project device. The lifespan should be reported if the methodology equation 5 is adopted to determine the project stove efficiency
Source of data	Manufacturer specification
Description of measurement methods and procedures to be applied	The data source as per manufacturer specification
Frequency of monitoring/recording	Once at the time of installation of batch of type of stove
Value monitored	7
Monitoring equipment	N/A

QA/QC procedures to be applied	N/A
Purpose of the data	Calculation of baseline emissions
Calculation method	Not applicable
Comments	--

Data / Parameter	Date of commissioning of batch j
Data unit	Date
Description	To establish the date of commissioning, the PP 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	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 monitored	1 st June, 2022
Monitoring equipment	N/A
QA/QC procedures to be applied	N/A
Purpose of the data	Calculation of baseline emissions
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	It was seen the there was a slight usage of baseline stove during current monitoring period observed, which was not significant. A discount factor of 0.909. was applied to account for the usage of the baseline stoves based on the survey responses of the households.
Frequency of monitoring/recording	At least once in 2 years
Value monitored	0.914
Monitoring equipment	Monitoring survey
QA/QC procedures to be applied	Monitoring based on a representative sample through a survey. Sampling standard is being 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. The project activity has achieved the required precision levels (at 95/10) when it comes to the value of $\mu_{y,ij}$.
Purpose of the data	Calculation of baseline emissions
Calculation method	Not applicable
Comments	During the monitoring survey for this parameter, a total of 230 samples were monitored. The age group bifurcation of these samples are provided in section 4.3.

4.3 Monitoring Plan

After the deployment of the ICS devices to the beneficiary households, they are monitored in regular intervals and feedbacks are procured from the beneficiaries through surveys using questionnaires. Any grievances, such as issues regarding stove hardware and performances, raised by the beneficiaries are addressed, as and when they arise. The monitoring system goes through the steps as illustrated in Figure 11, and the whole monitoring cycle is repeated in multiple rounds. The steps involved in the monitoring process have been elaborated and provided in Appendix III.

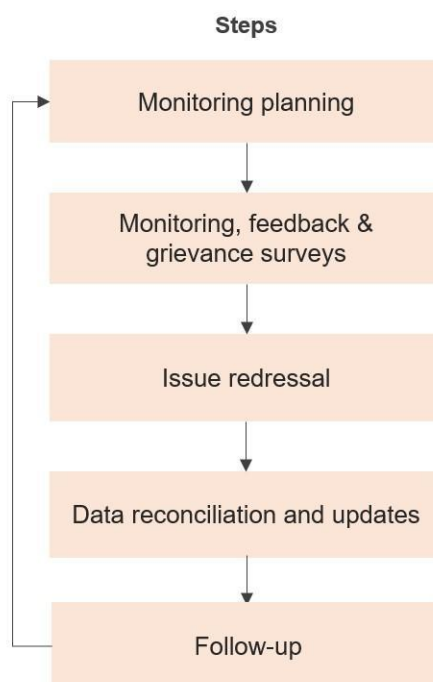


Figure 11: Steps involved in the monitoring process

Sample Plan:

The monitoring plan is designed to monitor the parameters listed in the monitoring plan of the registered PD, which are required for calculation of the actual GHG emission reductions achieved by the project activity using ex post sampling survey. The share of the operating stoves and the continued use of pre-project devices is being determined based on sampling procedures.

No monitoring for leakage through competitive uses of biomass is required, as the parameter '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, the sampling plan is the following:

(a) Sampling Design

Due to the large number of ICS distributed as part of the project activity, it is not economically feasible to monitor each individual ICS unit distributed. Therefore, representative sampling is 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 09.0.⁹

⁹ https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20210531160756223/Meth_Stan05.pdf

(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 Activities, Version 9.0, 90/10 confidence/precision is to be adopted for small-scale projects and 95/10 confidence/precision for large-scale projects. 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 are below the threshold.

Table 6: Monitored parameter - its description and frequency of monitoring

Parameter	Description	Parameter type/frequency
$N_{y,i,j}$	Number of project devices of type i and batch j operating during year y	Proportion/ Biennial
$\mu_{y,i,j}$	Adjustment to account for any continued use of pre-project devices during the year y	Proportion/ Biennial
$B_{y=1,new,i,j,survey}$	Quantity of woody biomass used by project devices in tonnes per device of type i and batch j	Mean value / Once, in the first year of the implementation of the project

(ii) Target Populations:

The target population ($N_{y,i,j}$) of this project are all the households in the project database which are using fuelwood in the Improved Cookstove (ICS) distributed under this project to meet their cooking needs, which are still in operation.

(iii) Sampling Frame

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

(b) 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 the 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 09.0.

As explained below (in 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 qualifying the following criteria:

(i) The same ICS models

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

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

In line with applied approved VMR0006 v1.1: “If both the improved cookstove and baseline cookstoves are used together then surveys shall be conducted to record the average continued operation of baseline cookstoves in a sample of households”.

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

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

However, for the second case, surveys may be conducted. 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 evidence to determine the frequency of usage of both the project devices and baseline devices. If there is a pre-project device in a household and it was determined during the survey that its use continues during the crediting period then a conservative adjustment factor is applied for the relevant monitoring

period. For 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 more precise data is available i.e., the thermal capacity of the project and pre-project devices and respective utilization hours are available, a weighted average adjustment factor may be used.

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

As mentioned above, either separate sampling can be done for this parameter or can be clubbed with sampling of above parameters, wherein additional questions may be included to determine the average fuelwood used by the project device. For this monitoring period, a KPT was conducted on 25 beneficiary households in line with the KPT Protocol provided by Clean Cooking Alliance.¹⁰

(iv) Sampling Method

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

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

$N_{y,i,j}$: Visual inspection of the premises to see if ICS is operational and in use. Interview with end-user, if required, to verify that ICS is still in use (Yes/No)

$\mu_{y,i,j}$: Pre project device only is in use then fraction to be used to calculate total number. However, if pre project device is used along with project ICS, proportion of usage of each will be determined by cooking habits evaluated by survey questionnaire during the monitoring period.

(v) Sample Size

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 annual and 95/5 confidence/precision for biennial sampling.

There are three parameters that will be estimated through sampling: the number of stoves still in operation during the monitoring period as determined by the monitoring survey ($N_{y,i,j}$), Quantity of woody biomass used by project devices in tonnes per device ($B_{y=1,new,i,j,survey}$) and the continued

¹⁰ KPT Version 3.0, Clean Cooking Alliance

use of old stoves, ($\mu_{y,i,j}$).

In line with sampling guidelines, all can be sampled in a single survey with a random sample of households using the above-described confidence/precision levels. The $N_{y,i,j}$ and $\mu_{y,i,j}$ require proportion/percentage parameters, however the wood consumption by ICS may have variation and is a mean value.

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.

The final sample size for the project activity is calculated based on the sample survey.

To estimate the sample size for parameters $N_{y,i,j}$ and $\mu_{y,i,j}$ the following equation is used:

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

Where,

n = sample size

N = population size (102,223)

p = expected proportion

1.96 = represents the 95% confidence required

0.1 = represents the 10% relative precision

Sample size calculation:

The calculation of the required sample size for $N_{y,i,j}$ and $\mu_{y,i,j}$ parameters in this monitoring period is illustrated below.

(i) Parameter $N_{y,i,j}$:

During the previous verification, 100% of the ICS were found to be in operation, however, the expected proportion (p) for $N_{y,i,j}$ parameter was considered as 0.95 conservatively.

Based on the above values, the resulting sample size for a 95/10 confidence/precision

is calculated as:

$$n \geq \frac{1.96^2 \times 102,223 \times 0.95 (1-0.95)}{(102,223 - 1) \times 0.1^2 \times 0.95^2 + 1.96^2 \times 0.95 (1-0.95)}$$

Which comes out to be $n \geq 20.2144$

However, the minimum sampling size for $N_{y,l,j}$ parameter is 30, as per the sampling standard.

Thus, $n = 30$

(ii) Parameter $\mu_{y,l,j}$:

During the previous verification, the $\mu_{y,l,j}$ parameter was found to be 1.0, however, the expected proportion (p) for $\mu_{y,l,j}$ parameter was considered as 0.90 conservatively.

Based on the above values, the resulting sample size for a 95/10 confidence/precision is calculated as:

$$n \geq \frac{1.96^2 \times 102,223 \times 0.95 (1-0.90)}{(102,223 - 1) \times 0.1^2 \times 0.90^2 + 1.96^2 \times 0.90 (1-0.90)}$$

Which comes out to be $n \geq 42.6654$.

Thus, $n = 43$.

Since parameters $N_{y,j,j}$, and $B_{y=1,new,i}$, survey share the same sampling units, it is decided to have one common survey for these two parameters, with the highest number of sample size between these two parameters being chosen, as per footnote 8 of the standard: Sampling and Surveys for CDM Project Activities and Programmes of Activities, Version 09.0. The samples for the monitoring survey were obtained through randomly selecting 250 samples using the Research Randomizer (<https://www.randomizer.org/>). The screenshot of the randomized serial numbers of the stoves is attached in Figure 12. A 20% buffer has been considered for the samples considering the possibility of no responses.

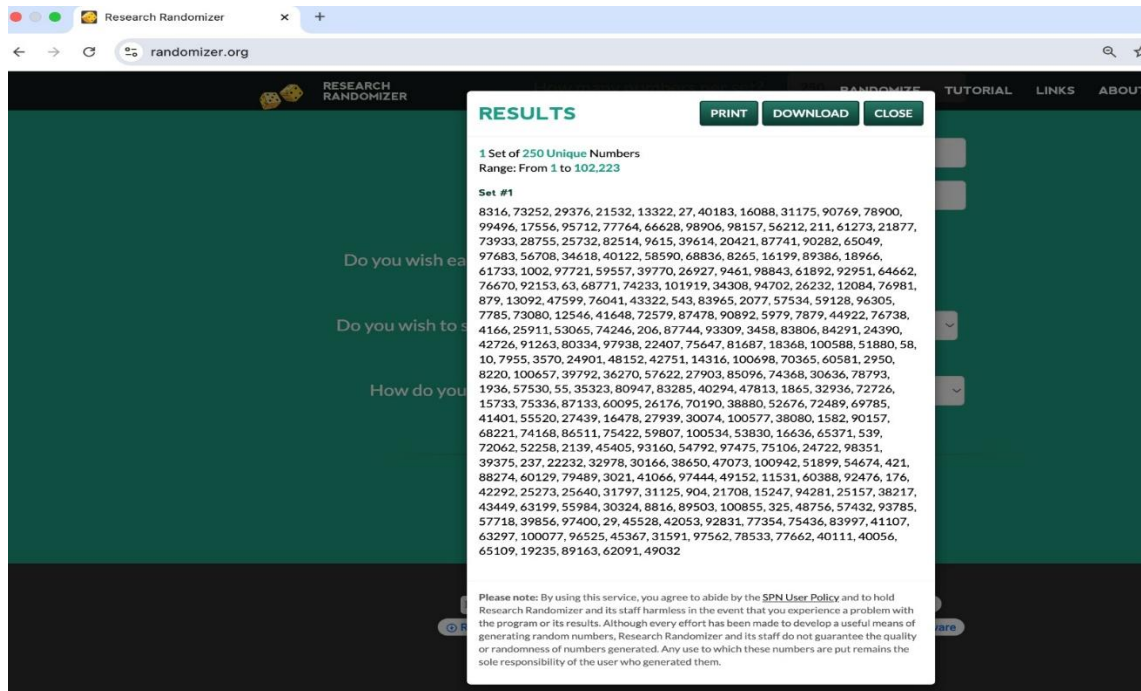


Figure 12: Screenshot of the randomizer tool which was used to generate 250 samples for the monitoring survey.

The project proponent scrutinized the monitored data obtained from the survey to confirm the accuracy of results, analyzed the data, and estimated the resulting emissions reductions outlined in section 5.4 in this monitoring report.

The parameters obtained through sampling, sample size and the sampling results are summarized in the table below:

Monitored parameter	Sample size	Actual samples surveyed	Survey results (Value)	Precision achieved
$N_{y,i,j}$	30	230	0.978	1.94%
$\mu_{y,i,j}$	43	230	0.914	3.96%

The number of ICS surveyed, as well as their age group are mentioned in the following table:

Stove Age Group	No. of stoves
1-2	38
2-3	185
3-4	27

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

The project activity has disseminated improved cookstoves to individual households as an energy efficiency measure in the project, therefore equations 1 and 2 of the methodology VMR0006 “Methodology for Installation of High Efficiency Firewood Cookstoves”, V 1.1, is applied to calculate the net GHG emission reductions.

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

Where,

i= indices for the situation where more than one type/model of improved cookstove is introduced to replace three-stone fire

j= indices for the situation where there is more than one batch of improved cookstove of type i

ER_y = Emission reductions during year y in tCO₂e

$ER_{y,i,j}$ = Emission reductions by improved cookstove of type i and batch j during year y in tCO₂e

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

Where,

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

$NCV_{wood\ fuel}$ = Net calorific value of the non-renewable woody biomass that is substituted or reduced (IPCC default for wood fuel, 0.0156 TJ/tonne)

f_{NRB} = Fraction of woody biomass that can be established as non-renewable biomass (0.901)

EF_{wf,CO_2} = CO₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 tCO₂/TJ)

$EF_{wf,non\ CO_2}$ = Non-CO₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 26.23 tCO₂/TJ)

$N_{y,i,j}$ = Number of improved cook stoves of type i and batch j operating during year y

0.95 = Discount factor to account for leakage

The quantity of woody biomass saved, $B_{y,savings,i,j}$, due to implementation of improved cookstoves is estimated by the following equations-

$$B_{y,savings,i,j} = B_{y=1, new,i,survey} \times ((\eta_{new,i,j, (weighted\ average)}) / \eta_{old}) - 1) \dots \dots \dots \text{Equation (4)}$$

Where,

η_{old} = efficiency of baseline cookstove (fraction)

$\eta_{new,i,j}$ = efficiency determined using equation 5 of applied approved methodology (%)

$B_{y=1, new,i,survey}$ = annual quantity of woody biomass used by improved cookstove in tonnes per device of type i and batch j, determined in the first year of the implementation of the project through a sample survey (tonnes/year/stove)

The efficiency of the project stoves can be estimated using the equation below.

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

Where,

η_P = efficiency of project stove (fraction) at the start of the project activity

$(DF_n)^{y-1}$ = discount factor to account for efficiency loss of project cookstove per year of operation (fraction).

0.94 = adjustment factor to account for uncertainty related to project cookstove efficiency test

The project activity involves distribution of only one type of ICS i.e., Greenway Jumbo Cookstove and all ICS devices under project consideration for emission reduction calculation has been distributed from the start date of the project to 30th June 2025, i.e., the last date of the current monitoring period.

Table 7: List of parameters used for emission reduction calculation, along with their values

Parameter	Unit	Value	Source
$N_{y,i,j}$	Number	100,001	Distribution record maintained by PP from the start date of the project up to the last date of the current monitoring period, i.e., 30 June, 2025.
$NCV_{wood\ fuel}$	TJ/tonne	0.0156	IPCC default value for wood fuel

f_{NRB}	fraction	0.714	As per registered PD
$EF_{wf,non\ CO2}$	tCO ₂ e/TJ	26.23	IPCC default value for wood fuel
$EF_{wf,CO2}$	tCO ₂ e/TJ	112	IPCC default value for wood fuel
η_{old}	fraction	0.1	Default value as per VMR006
$\eta_{new,i,j}$	Fraction	0.38	Efficiency of the stoves as per the WBT report
$\eta_{new,i,j}, Y=1$	Fraction	0.3572	Efficiency of the stove in the first year
$\eta_{new,i,j}, Y=2$	Fraction	0.3536	Efficiency of the stove in the second year
$\eta_{new,i,j}, Y=3$	Fraction	0.3501	Efficiency of the stove in the third year
$\eta_{new,i,j}, Y=4$	Fraction	0.3466	Efficiency of the stove in the fourth year
$B_{y=1, new,i,survey}$	tonne/household/year	1.406; i.e. (3.85*365)/1000=1.406	As per KPT conducted from 22 nd December, 2022 to 6 th January, 2023
$B_{y,savings,i,j},Y=1$	tonne/household/year	3.6162	Calculated
$B_{y,savings,i,j},Y=2$	tonne/household/year	3.5660	Calculated
$B_{y,savings,i,j},Y=3$	tonne/household/year	3.5163	Calculated
$B_{y,savings,i,j},Y=4$	tonne/household/year	3.4671	Calculated

The emission reduction is calculated as below for improved cookstoves installed on 1st June, 2022, which is considered the commissioning date of the first batch. The ICS installed from that

date, on daily basis, is considered as a batch and emission reduction is calculated based on the number of days of operation. Following is the emission reduction for 1st July, 2024 till 30 June 2025, for an Improved Cookstoves for 365 days of operation:

For example, if we assume that 1 stove had been distributed on the 1st day of commissioning (i.e., 1st January, 2022), then the ER will be calculated as follows:

$$ER_{y,i,j} = B_{y,savings,i,j,Y=4} \times NCV_{wood\ fuel} \times f_{NRB} \times (EF_{wf,CO2} + EF_{wf,non\ CO2}) \times N_{y,i,j} \times 0.95 \times (336/365)$$

$$= 3.4671 \times 0.0156 \times 0.714 \times (112+26.23) \times 1 \times 0.95 \times (365/365)$$

$$= 5\ tCO_2e$$

5.2 Project Emissions

The methodology does not account for baseline emissions and project emissions separately but instead quantifies net emissions reduction achieved by the project.

5.3 Leakage Emissions

Leakage is already accounted for in the calculation of emissions reduction by adjusting with the default value of 0.95.

5.4 GHG Emission Reductions and Carbon Dioxide Removals

Table 8: Net GHG emissions reductions in tCO₂e

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-2024 to 31-December-2025	260,011	0	0	260,011	N/A	260,011
01-Jan-2025 to 30-Jun-2025	255,771	0	0	255,771	N/A	255,771
Total	515,782	0	0	515,782	N/A	515,782

Vintage period	Ex-ante estimated reductions/removals	Achieved reductions/removals	Percent difference	Explanation for the difference
01-Jul-2024 to 31-Dec-2024	255,202	260,011	1.85%	The ex-ante estimates assumed the $B_{y,savings,i,j,Y=1}$ value as 3.4722 tonnes/household/year, $B_{y,savings,i,j,Y=2}$ value as 3.4240

				tonnes/household/year and $B_{y,savings,i,j,Y=3}$ value as 3.3762 tonnes/household/year based on the assumed value of $B_{y=1, new,i,survey}$ value as 1.350 tonnes/household/year. While the ex-post $B_{y=1, new,i,survey}$ value resulting measurement campaign (in the form of KPTs) was 1.406 tonnes/household/year resulting in the $B_{y,savings,i,j,Y=1}$ value of 3.6162 tonnes/household/year, $B_{y,savings,i,j,Y=2}$ value of 3.5660 tonnes/household/year and $B_{y,savings,i,j,Y=3}$ value as 3.5163 tonnes/household/year which is higher than the ex-ante value.
01-Jan-2025 to 30-Jun-2025	251,042	255,771	1.85%	The ex-ante estimates assumed the $B_{y,savings,i,j,Y=1}$ value as 3.4722 tonnes/household/year, $B_{y,savings,i,j,Y=2}$ value as 3.4240 tonnes/household/year and $B_{y,savings,i,j,Y=3}$ value as 3.3762 tonnes/household/year based on the assumed value of $B_{y=1, new,i,survey}$ value as 1.350 tonnes/household/year. While the ex-post $B_{y=1, new,i,survey}$ value resulting measurement campaign (in the form of KPTs) was 1.406 tonnes/household/year resulting in the $B_{y,savings,i,j,Y=1}$ value of 3.6162 tonnes/household/year, $B_{y,savings,i,j,Y=2}$ value of 3.5660 tonnes/household/year and $B_{y,savings,i,j,Y=3}$ value as 3.5163 tonnes/household/year which is higher than the ex-ante value.
Total	506,244	515,782	1.85%	--

APPENDIX 1: COMMERCIALY SENSITIVE INFORMATION

Section	Information	Justification
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A
N/A	N/A	N/A

APPENDIX II: EVIDENCES OF SUSTAINABLE DEVELOPMENT CONTRIBUTIONS

SDG 1: No Poverty

Till the current monitoring period, a total of 100,001 households have been enabled access to clean cooking technology through increased investment (SDG 1.4.1). The same number can be verified through the distribution record provided in the ER sheet.

SDG 3: Good Health and Well Being

The households participating in the project have reported benefits in their respiratory health, along with other benefits especially relating to lessening of coughing, difficulty in breathing and irritation of the eyes. All of the households have reported the above-mentioned benefits; thus, the project contributes to fulfilment of SDG 3.4.1. 97.8% of the households reported a reduction of smoke in the cooking area, which means that the indoor air pollution has reduced (SDG 3.9.1).

The same details can be verified through accessing the data recorded on the survey responses provided in the ER sheet.

SDG 5: Gender Equality

The women members of the beneficiary households have experienced a significant reduction in the time spent on cooking and fuelwood collection. This is owing to the higher thermal efficiency of the ICS and the lesser amount of fuelwood it consumes (vis-a-vis baseline stoves). The resultant weekly time savings in fuel collection was 4.18 hours, and daily time savings in cooking time was 2.31 hours, averaging across the samples. As a result, this time available for these women to engage in other economic opportunities. In this way, the project is helping to achieve SDG 5.4.1.



Figure 13: Time saved in fuelwood collection by members of the beneficiary households (vis-à-vis baseline cookstoves)

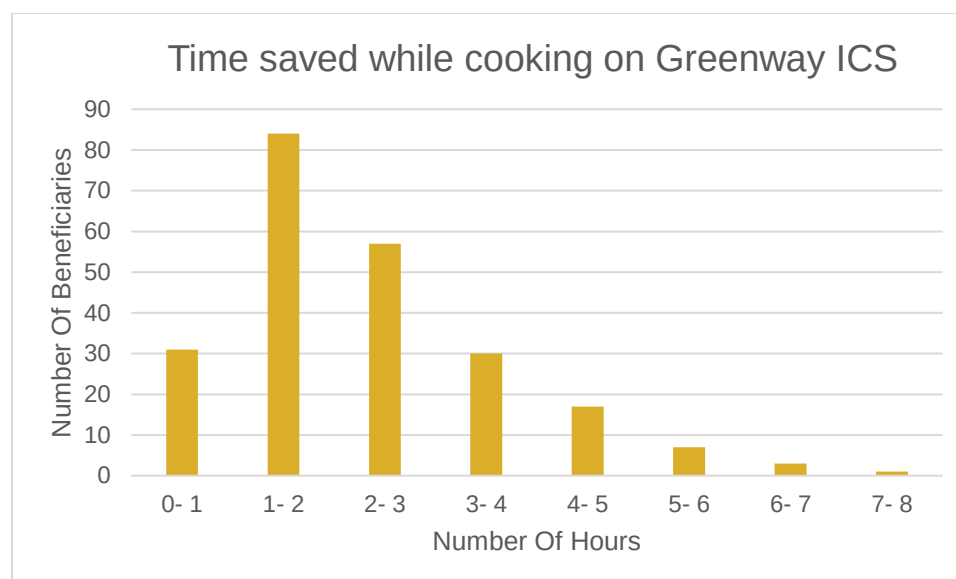


Figure 14: Time saved by cooking on Greenway Jumbo ICS by the beneficiary households (vis-à-vis baseline cookstoves)

SDG 7: Affordable and Clean Energy

Till the current monitoring period, a total of 100,001 ICS has been distributed, thereby reducing the use of inefficient baseline traditional stoves. The project increases access to cleaner cooking energy options for the participating households (SDG 7.1.2).

SDG 8: Decent Work and Economic Growth

The households reported saving a significant amount of time spent on cooking and fuelwood collection. The saved time was spent on pursuing other economic activities, which resulted in an increase in incomes of the households. The households have reported saving 386 INR per month on average. The project has given direct employment to 36 local community members from Odisha (SDG 8.3.1), who engage in the process of awareness generation, distribution, logistics and monitoring. In addition to generating jobs locally, the project enables stable employment for operators and managers involved in the production of the project cookstoves.

SDG 10: Reduced Inequalities

All the households reported an increase in their monthly savings, after switching to the Greenway Jumbo stove (SDG 10.1.1). The average savings during this monitoring period was 386 INR across the entire sample of 230 households surveyed during the current monitoring period. Majority of

the households used their financial savings from using Greenway Jumbo ICS for buying groceries, followed by putting the same into their savings accounts (figure 14).

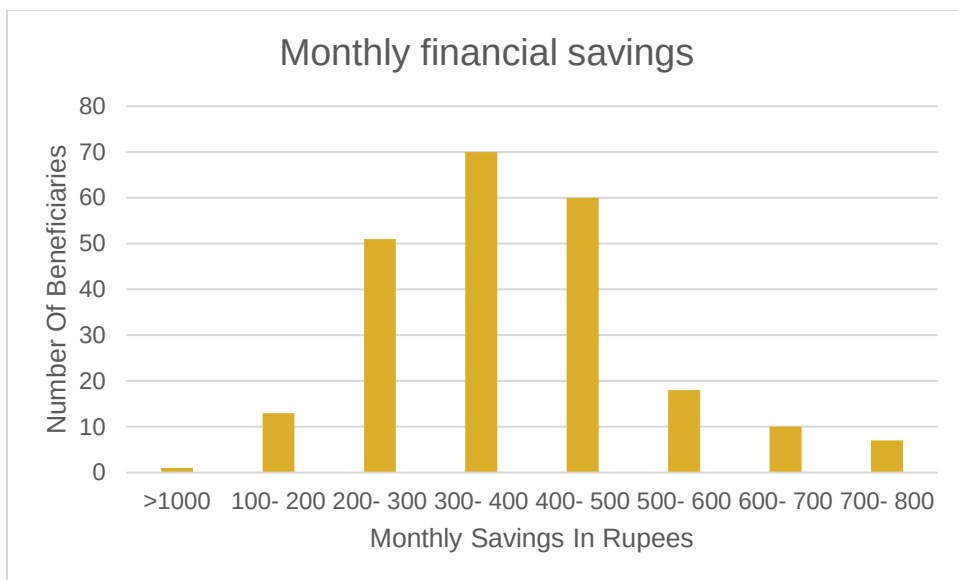


Figure 15: Monthly savings of the beneficiary households through the use of Greenway Jumbo ICS

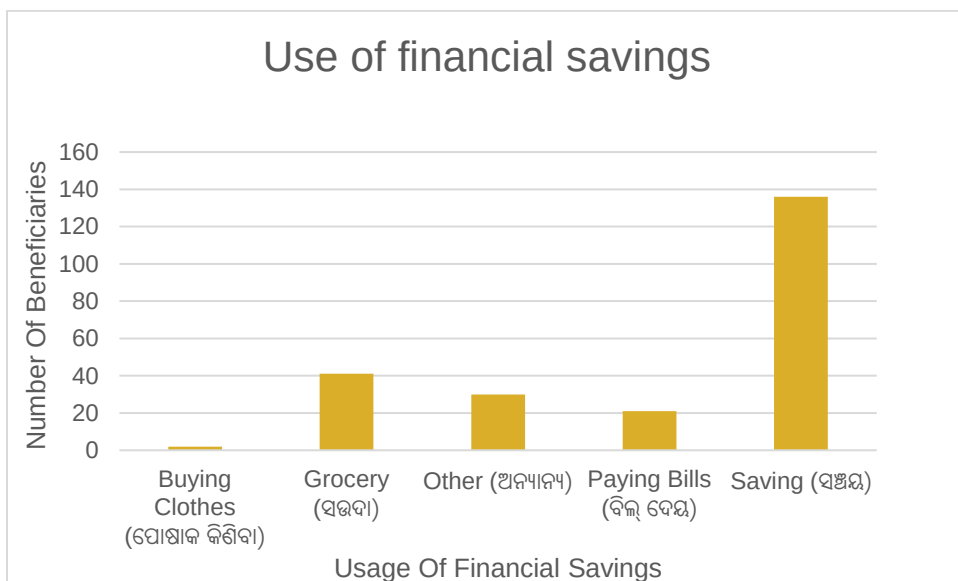


Figure 16: Type of ways the financial savings are used by the beneficiary households

The project has employed 3 local female partners during the current monitoring period (SDG

10.2.1). They engaged in the process of awareness generation, distribution, logistics and monitoring.

SDG 13: Climate Action

Through the distribution of improved cookstoves and thereby replacing the inefficient baseline cookstoves, the project has prevented the release of 515,782 tCO₂e into the atmosphere during the current monitoring period (SDG 13.2.2). This can be verified by accessing the ER sheet provided.

APPENDIX III: DISTRIBUTION SYSTEM

Table 9: The distribution system of the project proponent (PP)

SL. No	Distribution Process	Description
1	Community outreach and demonstration	The PMs, CIs and GSs, plan and conduct product demonstrations to 20-30 households more than thrice a week. The households selected are notified of the demonstrations to be conducted through newspaper advertisements, outreach through local NGOs, etc. Product demonstration is done through Standard Operating Procedures (SOPs) and training is imparted to the end users to generate awareness regarding the use of the ICS. All the awareness generation events/ local stakeholder consultations conducted during the implementation of the project are recorded and these records serve as valid proofs during auditing/verification processes which help in substantiating greater or continued adoption of ICS.
2	Order placement	The GS, CI record orders from interested households on a mobile app made available to them for distribution & processes related to distribution.
3	Baseline check	The CIs conduct a preliminary baseline survey using SOP for baseline check of the households and the locations. To ensure the integrity and quality of the baseline data being recorded, the PM and CIs are trained on the same.
4	Dispatch and lastmile delivery	Upon the placement of the orders, the stove is dispatched from the warehouse. CI, PM, AV are entities involved in smoothly carrying out dispatch and last-mile delivery, making use of delivery vehicles for transportation of ICS to the end users. Logistics partners are also involved in the dispatch and last-mile delivery phase.
5	User data collection	The user data is recorded by the GS and data team when the ICS is passed to the household on a pre-set date. The tools employed in this process include usage of the mobile app by the GS and the data team for recording user data during distribution and survey. The people involved in this process are trained to operate the app and equipped with appropriate resources to fix bugs.
6	Data verification	Tele-verification is conducted by the data verification officers in the data team to ensure the integrity and quality of the database on the

		beneficiary households. The admin data console is made use of by the data verification officers to conduct the quality checks.
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APPENDIX IV: MONITORING SYSTEM

The monitoring process is repeated in multiple rounds, the steps tabulated in Table 10 are as follows:

Table 10: Description of the steps involved in the monitoring process

Sl. No.	Monitoring process	Description
1	Monitoring planning	The PM, CI, GS are involved in planning the monitoring of households where stoves have been deployed and they make use of the information held within the database for this purpose. The households are monitored regularly once a week which helps keep the database up-to-date.
2	Monitoring, feedback and grievance surveys	The GS and CI use comprehensive surveys to monitor the frequency and pattern of usage, record feedback about product issues and other such grievances. The tools employed for this purpose include the mobile app for monitoring and training the GS and CI on how to use the mobile app and how to monitor.
3	Issue redressal	The PM, GS and CI work at addressing the grievances raised by the customers and it involves works such as stove repair, replacement use, maintenance. The GS/CI are trained to deliver such kinds of customer support and are equipped with spares for replacement, so that they can efficiently carry out the issue redressals as and when such situations arise.
4	Data reconciliation and updates	The members comprising the data team and carbon team oversee data reconciliation in case of stove ID mismatch, ownership change (wherein end users give away their stoves to another party such as their relatives or neighbours) or data quality issues. Data team and carbon team members make use of SOP for data access and data admin console for overseeing data reconciliation and updates.
5	Follow-up	All the team members involved in the project are involved in the follow-up process and see to the implementation of the feedback received. It feeds back into the monitoring planning and the monitoring process is duly followed all over again for subsequent rounds of project monitoring.

APPENDIX V: TRAINING SESSIONS CONDUCTED FOR THE IMPLEMENTATION TEAM

Date of Training	Topic of Training	Venue / Location
01-07-2024	Survey Training	Cuttack, Odisha
23-07-2024	Data Training	Hindol, Odisha
02-08-2024	Survey Training	Khorda, Odisha
12-09-2024	Survey Training	Koska, Odisha
21-10-2024	Road safety Training	Google Meet
22-10-2024	Data training	Khandapada, Odisha
14-11-2024	System Audit Training	Puri, Odisha
07-12-2024	Product and Demo Training	Google Meet
17-01-2025	Data Training	Google Meet
27-01-2025	Data Training	Google Meet
30-03-2025	Survey Training	Google Meet
06-06-2025	Mobile Application and Data Training	Google Meet
30-06-2025	Maintenance Training	Google Meet

APPENDIX VI: GRIEVANCE REDRESSAL MECHANISM

