



WOMEN LED CLEANER COOKING INITIATIVE IN ODISHA

Document Prepared by Jagurih Corporate Consultants Pvt. Ltd.

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CONTENTS

1	PROJECT DETAILS.....	4
1.1	SUMMARY DESCRIPTION OF THE PROJECT	4
1.2	SECTORAL SCOPE AND PROJECT TYPE	4
1.3	PROJECT ELIGIBILITY	5
1.4	PROJECT DESIGN.....	5
1.5	PROJECT PROPONENT.....	8
1.6	OTHER ENTITIES INVOLVED IN THE PROJECT	8
1.7	OWNERSHIP	9
1.8	PROJECT START DATE	9
1.9	PROJECT CREDITING PERIOD.....	9
1.10	PROJECT SCALE AND ESTIMATED GHG EMISSION REDUCTIONS OR REMOVALS.....	9
1.11	DESCRIPTION OF THE PROJECT ACTIVITY.....	10
1.12	PROJECT LOCATION	11
1.13	CONDITIONS PRIOR TO PROJECT INITIATION	12
1.14	COMPLIANCE WITH LAWS, STATUTES AND OTHER REGULATORY FRAMEWORKS.....	12
1.15	PARTICIPATION UNDER OTHER GHG PROGRAMS	12
1.16	OTHER FORMS OF CREDIT	13
1.17	SUSTAINABLE DEVELOPMENT CONTRIBUTIONS.....	13
1.18	ADDITIONAL INFORMATION RELEVANT TO THE PROJECT	14
2	SAFEGUARDS.....	14
2.1	NO NET HARM	14

2.2	LOCAL STAKEHOLDER CONSULTATION	16
2.3	ENVIRONMENTAL IMPACT	17
2.4	PUBLIC COMMENTS.....	17
2.5	AFOLU-SPECIFIC SAFEGUARDS	19
3	APPLICATION OF METHODOLOGY.....	19
3.1	TITLE AND REFERENCE OF METHODOLOGY	19
3.2	APPLICABILITY OF METHODOLOGY	20
3.3	PROJECT BOUNDARY	22
3.4	BASELINE SCENARIO	23
3.5	ADDITIONALITY	23
3.6	METHODOLOGY DEVIATIONS.....	26
4	QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS	26
4.1	BASELINE EMISSIONS.....	26
4.2	PROJECT EMISSIONS	30
4.3	LEAKAGE.....	30
4.4	NET GHG EMISSION REDUCTIONS AND REMOVALS.....	30
5	MONITORING	33
5.1	DATA AND PARAMETERS AVAILABLE AT VALIDATION	33
5.2	DATA AND PARAMETERS MONITORED	36
5.3	MONITORING PLAN	41

1 PROJECT DETAILS

1.1 Summary Description of the Project

The proposed grouped project seeks to improve the household conditions of rural and semi urban communities living in Odisha state of India by distributing better and efficient cookstoves called Improved Cookstoves which have higher thermal efficiency and would emit low amount of greenhouse gases (GHG) as compared to traditional cookstoves. The proposed grouped project activity will help in reducing the GHG emissions. The old and traditional cookstoves having low thermal efficiency and emitting high amount of greenhouse gases will be replaced with new and efficient cookstove technologies, viz., Improved Cookstoves (ICS). Implementation of the proposed grouped project activity will not only result in greenhouse gas reduction from the atmosphere but will also help the reduction of consumption of firewood leading to climate change mitigation in a sustainable manner. The project activity, in turn, will contribute to reduction of greenhouse gases from the atmosphere, conservation of forest and also improving the quality of health of the ICS users as the indoor air quality will be also improved along with drudgery reduction in everyday cooking.

The Project Proponent (PP) for this proposed grouped project activity is 'SDG 13 Ventures Pte Ltd' (herein after called as "SVPL"). SVPL is a company registered in the Republic of Singapore. SVPL will facilitate distribution of ICS for rural and semi-urban households in India. The project activity will enable the dissemination of ICS manufactured by appropriate ICS manufacturers or technology suppliers meeting project eligibility criteria to the end user.

In the absence of the project activity, the baseline scenario will be the continuous use of non-renewable fuelwood by the target population to meet similar thermal energy demands provided by the ICS in the project scenario.

SVPL will coordinate with the ICS users directly or through its representatives or through their local partners to make it certain that all requirements with respect to the project activity (like assisting with validation and registration, record keeping, monitoring and survey of households at a regular interval, etc.) are met. The ICS users will agree and sign to an agreement with the PP acknowledging their inclusion of the stove into the project activity. The SVPL will provide ICS to end users with more than 60% subsidy.

The estimated annual average GHG emission reduction for the project activity is 1,558,866 tCO₂e and the total GHG emission reduction estimated for the entire crediting period for the proposed grouped project activity is 15,588,662 tCO₂e.

1.2 Sectoral Scope and Project Type

Sectoral Scope – 03 (Energy Demand)

Project type – Type II – Energy Efficiency Improvement Project

Grouped project – Yes

1.3 Project Eligibility

The project involves energy efficient cookstove distribution which falls under the category of efficiency improvements in thermal applications, therefore it is eligible under the scope of VCS Program as per VCS Standard Version-4.3.

1.4 Project Design

The proposed project activity is a grouped project activity

Eligibility Criteria

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

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 boundary of Odisha, a state in the host country India. All distributed ICS in a project instance shall be located within geographical boundary.	Location and boundary specified in the project instances stating that the ICS location is limited to a region of Odisha and is supported by Distribution records of ICS.
2	Conditions that avoid double counting of emission reductions like unique identification of product and end-user locations	A unique numbering system for ICS will be applied in each project stances, assigning a unique number to each ICS and allowing to clearly identify for each ICS to which project stance/cluster it belongs.	The ICS installed in any project instance under this grouped project shall be uniquely identifiable by unique numbering and will be supported by the distribution records. Each ICS distributed will have corresponding end user details (i.e. name, address etc.). Additionally, unique id shall be displayed on the stove itself. The unique numbering or

			identification regime will be verifiable by the DOE.
3	The specifications of technology/measure including the level and type of service, performance specifications including compliance with testing/certifications	Project instances under this grouped project will consist of the distribution of ICS with a thermal efficiency of at least 25% efficiency 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 cook-stoves for biomass fired ICS as defined in the VCS PD. Stove types replaced and implemented is defined in the VCS PD, and hence appliances involving the efficiency improvements in the thermal applications of non-renewable biomass as per VMR0006.	Type of conventional cook-stoves replaced and ICS type/s implemented and compliance with the technological requirements of VMR0006 to be met. Project product data sheets or specification or product information sheets from manufacturer / Stoves distribution records.
4	The conditions that ensure that the project instances meet the requirements pertaining to the demonstration of additionality	Have characteristics with respect to additionality that are consistent with the initial instances for the specified project activity and geographic area.	The additionality will be demonstrated using financial barrier option in line with applied approved methodology VMR0006 Step 1: The project implementation is not mandated by government policy or regulation in host country. Step 2: Not applicable

			Step 3: Revenue stream analysis to be done to prove that project activity is not financial attractive than at least one alternative.
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 requirements related to sampling for a project instance in accordance with the sampling guidelines including all annexes and amendments till EB 86 Annex 04 and Sampling and surveys for CDM project activities and program of activities version 09.0	Specification of the sampling methods applied and compliance with the sampling requirements are established at the Project Description. For each project instances Sampling will be undertaken as part of the Project Description Sampling Plan.
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 instances participating in the group project shall comply to the requirements to the methodology as explained below in section 3.2 of PD.
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 implementation of the project instance can be confirmed through ICS distribution records.
9	VCU ownership	End users receiving ICSs under the specific project instances contractually cede their rights to claim and own emission reductions under the VCS to the PP of the project.	A default distribution agreement for end users including the provision that emission reductions generated by the stove are owned by the PP will be provided for each instance.

10	Have evidence of project ownership, in respect of each project activity instance, held by the project proponent from the respective start date of each project activity instance	The ownership of the project activity is with SDG13 Ventures Pte Ltd. The end users receiving ICS under each project instances will sign an end user beneficiary agreement with the project proponent and transfer the rights to claim carbon credit benefit to project proponent.	An end user agreement /distribution agreement among PP and the end user will be provided for each instance.
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1.5 Project Proponent

Organization name	SDG13 Ventures Pte Ltd
Contact person	Ms Neha Juneja
Title	Director
Address	100 Peck Seah Street #10-18 PS100 Singapore 079333
Telephone	+65 6962 0655
Email	sdg13ventures@gmail.com , nj@sdg13ventures.com

1.6 Other Entities Involved in the Project

Organization name	Jagurih Corporate Consultants Pvt. Ltd.
Role in the project	Consultant
Contact person	Mr. Phool Chand
Title	Director
Address	GF-35, Omaxe Square, Plot No.14, Jasola District Centre New Delhi-110025, India
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Email	info@jagurihgroup.com

1.7 Ownership

All the legal ownership of the project is with SDG13 Ventures Pte Ltd. When the ICS is handed over to a household, the participating household will sign a declaration to transfer the ownership rights of the carbon asset generated from the project to the project proponent.

1.8 Project Start Date

The start date of the project activity is 1st June 2022 which is the commissioning of the first batch of ICS

1.9 Project Crediting Period

The crediting period of the project activity will be from 01-June-2022 to 31-May-2032.

Ten years fixed crediting period.

1.10 Project Scale and Estimated GHG Emission Reductions or Removals

Project Scale	
Project	
Large project	✓

Year	Estimated GHG emission reductions or removals (tCO _{2e})
2022-2023	553,157
2023-2024	1,010,460
2024-2025	1461,411
2025-2026	1,906,075
2026-2027	2,344,514
2027-2028	2,223,635
2028-2029	2,192,508
2029-2030	1,741,557
2030-2031	1,296,893
2031-2032	858,453

Total estimated ERs	15,588,662
Total number of crediting years	10
Average annual ERs	1,558,866

1.11 Description of the Project Activity

The proposed grouped project activity aims to distribute Improved Cookstoves to the rural and semi-urban households who use traditional, unimproved cookstoves or use open fires for cooking purposes in Odisha state of India. The project instances under the grouped project will disseminate fuelwood sourced ICS to households, The portable ICS will be manufactured in Odisha and will have a lifespan of 7 years and thermal efficiency of about 38%.

A typical project instance will replace the low efficient conventional firewood stoves with higher efficiency ICS models by leveraging resources provided by the project activity in rural/semi-urban areas. These ICS are better than the conventional firewood stoves as they reduce the heat loss while improving heat transfer and combustion of fuel. The ICS are fuel efficient resulting in lowered usage of fuel wood vis-à-vis the conventional cookstoves while reducing the smoke generation resulting in decreased emission of particulate matter and carbon emission in the atmosphere. Hence, decreasing the risk of pulmonary health diseases in the households. The design consideration of ICS has also kept ergonomics and safety in mind.

The project activity will continually assess other biomass stove technology options with the goal of providing the high performance, affordable and locally appropriate technologies to the local environments when possible. When the project will expand several models of ICS manufacturers may be included, provided, they meet the project and methodology requirements. So, research and development may introduce more efficient ICS during the project lifetime. Upon inclusion into the project activity, all ICS will remain valid throughout the lifetime of the project period until the PP chooses to discontinue crediting of the improved stoves. Each project instances will provide a detailed description on the specific stove model/s implemented/envisaged to be implemented and the target customers for each of them.

Below is the currently eligible ICS:

1. Greenway Jumbo stoves

The ICS cooking system is made of a fuel chamber for combusting the renewable biomass. The pot-rest is above the fuel chamber. The stove has one air inlet and weighs approximately 3,782 grams.



Fig. Greenway Jumbo ICS

A record keeping system and unique identification of the ICS will be done by user's information collected through the Beneficiary Agreement and compiled in distribution records. This will include user name, identification number and address/location of the user's house, stove unique serial code and distribution date. The record keeping system will ensure that each ICS can be traced to project to avoid double counting.

1.12 Project Location

The grouped project will be implemented in Odisha, a state in the Republic of 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



Fig. Project Location

1.13 Conditions Prior to Project Initiation

The purpose of the project is to reduce the demand for non-renewable biomass for household cooking needs. An estimated 50% to 60% of households in rural India still cook using traditional biomass stoves and open fires. The project aims to reduce the environmental and social burdens caused by inefficient biomass cooking by introducing energy efficient wood stoves to low- income households

1.14 Compliance with Laws, Statutes and Other Regulatory Frameworks

There are no laws and regulations governing the use of improved cookstoves in India for households. The project is a voluntary effort by the project proponent. Though, the government of India promotes use of clean fuel e.g. LPG, however due to the initial capital cost and operating cost, the usage levels are low and most of the rural households still use traditional stoves for cooking.

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

1.15 Participation under Other GHG Programs

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

The project activity has not been registered or currently seeking registration under any other GHG programs. The project has not participated under any other GHG program.

1.15.2 Projects Rejected by Other GHG Programs

The Project Proponent hereby declares that any other GHG program has not rejected the project activity; an undertaking for the same has been submitted by the Project Proponent.

1.16 Other Forms of Credit

1.16.1 Emissions Trading Programs and Other Binding Limits

This project activity is voluntary initiative and it is not to meet any local laws or regulatory compliances. An undertaking has been submitted that PP shall not claim for GHG emission reduction credits for the given crediting period under any other emission-trading program or GHG binding limits.

1.16.2 Other Forms of Environmental Credit

The Project Proponent declares that emission reductions generated from the project activity will not be double-counted (i.e., issuance of other form of environmental credit like under CDM) for the particular crediting period, which is being claimed under VCS mechanism. PP has submitted an undertaking to the VVB that they shall not claim for GHG emission reduction credits for the given period under any other emission-trading program.

1.17 Sustainable Development Contributions

Government of India has stipulated following indicators for sustainable development in the interim approval guidelines¹ for CDM projects:

- Social well being
- Economic well being
- Environmental well being
- Technological wellbeing

The following sustainable development benefits are envisaged from the project activity.

Distribute 500,000 high-efficiency, clean burning Greenway Jumbo Cookstoves in India, to benefit over 2 million individuals. (SDG 7.1.2)

Reduce the total fuelwood usage in the project area to generate approximately 15.5 million tCO₂e of emission reductions. (SDG 13)

¹ <https://moef.gov.in/en/clean-development-mechanism-interim-approval-criteria/>

Significantly reduce Household Air Pollution (HAP) in rural households (SDG 3.9.1)

Reduce instance of non-communicable respiratory disease, such as Chronic Obstructive Pulmonary Disease (COPD) among adult family members, particularly women and the elderly. (SDG 3.4.1)

Reduce the risk of mortality among infants and children under five years of age due to (1) acute lower respiratory illnesses (ALRI), such as pneumonia and bronchitis, the cause of mortality in 12% of children under five, and (2) burns resulting from children falling into open cooking fires. (SDG 3.2.1, 3.2.2)

Reduce the proportion of time women spend on unpaid domestic work related to collection of firewood, and cooking meals on inefficient traditional cookstoves. (SDG 5.4.1)

1.18 Additional Information Relevant to the Project

Leakage Management

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

Commercially Sensitive Information

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

Further Information

Not Applicable.

2 SAFEGUARDS

2.1 No Net Harm

No potential negative environmental or socio-economic impacts have been identified for the project. A summary of the same is described from the following table.

Aspect	Potential Impacts	Mitigation
Environmental	Usage of metals in manufacturing of stoves	The materials needed to manufacture the stoves only purchased from suppliers with high standards of manufacturing practices as evident in the certifications of their products. The stove manufacturing process is also aligned with industry best practices and local

		materials are used to the maximum extent possible.
	Environmentally harmful disposal of end-of-life or unused stove devices	PP will ensure safe collection/ disposal of the devices through their channel partners and ground team.
	ICSs do not have a significant contribution in fuel savings	ICSs deliver 65% fuel savings and 70% smoke reduction while working on all solid biomass fuels. This has been tested through internationally accepted test protocols conducted in accredited labs.
Economic	Unaffordable stoves or Increased burden of payment on households for the stoves.	The devices are heavily subsidised for the customer who only cover a fraction of its cost. Based on the feedback during awareness generation only a small payment is requested which is comfortable for households.
Social	The customers do not use the stove actively due to difficulty in usage	The stove supplier will have a regular touch point with customers for awareness generation to enable maximum usage. Moreover, the stove is easy-to-use for the customers without them having to change their cooking habits. This and the provision for parts and/or maintenance for the devices ensures sustained usage.
	Stakeholders perceive the project to be of low or no utility to them without any benefits to the community.	This proposed project will establish mechanisms for communication with local stakeholders during project design and implementation phase. These concerns shaped the project design and will be continually addressed.
	ICSs being women centric may lead to gender divisions with male members (who control household finance) not deriving value from the product.	ICSs are family centric. Based on grassroot feedback the stove was pitched as a family product that is durable, aesthetic, safe, efficient and an investment for better health & family economy. It was advertised through local print and TC media. This led to more acceptance and word of mouth publicity.

2.2 Local Stakeholder Consultation

The local stakeholder consultation for the grouped project activity was organised on 15/12/2021 at Adhikar Microfinance Pvt. Ltd. in Kalinga Nagar, Bhubaneswar, Odisha from 4 p.m. to 6 p.m. The stakeholder consultation was conducted at the group project activity level as the technology and its impact will be similar for all the project activities implemented in this group project activity. All interested stakeholders from the following groups: traditional cookstove users, NGO representatives, field assistants working on the project attended the meeting.

The stakeholders were informed by press release published in the local newspaper “The Prameya” on 27/11/2021. Detailed contact information such as phone number and email address of the representative of the project implementor were also made available in the press release for the stakeholders who could not physically attend the local stakeholder consultation. Due to the rising covid pandemic situation, online participation on a shared link was also encouraged. A total of 26 participants attended the meeting.

The project representatives explained in detail about the technology (ICS) to be employed. The detailed aspects of the grouped project activity including its objectives, associated benefits and environmental and socio-economic issues were also discussed.

The stakeholder meeting was started with a welcome note by the organisers, then nomination of a chairman for the meeting and a presentation of Improved Cook Stoves (ICS) features and benefits by adapting new technology. The stakeholders present were informed about the objective of meeting and being requested to raise any concerns anytime (during and also after the meet) they may have regarding technology or programme. All the attendees were provided with the details of the project implementors if they wish to raise any concerns even after the local stakeholder meeting. No negative comments or suggestions on the proposed project activity were raised by any participants during the meeting. All the attendees expressed their satisfaction with the project activity and appreciated for the work SVPL is doing for the good of the environment and the society.

After the detailed presentation on the grouped project the participants got involved asking their questions regarding the ICS. The following excerpts were recorded during the meeting:

Mr. Santhosh asked, how new cookstoves could reduce smoke?	The ICS are designed in a way to reduce smoke. The project will replace conventional firewood stoves with higher efficiency, Clean Cookstove models. The models are Greenway Jumbo cookstoves are fuel efficient resulting in decrease in fuel use while also reducing particulate matter and carbon emissions. The greenway Jumbo cookstoves reduce heat loss and improve heat transfer and combustion efficiency.
Mr. Ved Prakash asked, does the project help in employment generation	Yes. The project would make a significant contribution to the socio-economic development of the region, as it'll provide direct employment to villagers. The production of cookstoves will generate direct employment for the artisans and clay-workers.

Ms. Richa asked, how efficient are the new cookstoves?	The traditional cookstoves had a thermal efficiency of around 10%. The new and improved cookstoves will provide a thermal efficiency of around 35%. This is more than 3 times the efficiency of the old cookstove.
Ms. Pravat Sutar asked, will everyone be able to gain access to the new cookstove and will any government subsidy be availed to buy the stoves?	The project will primarily target vulnerable households. However, the Clean cookstoves are available for all interested households. The participation fee is defined according to the economic capacity of the rural households. It is also possible to pay the subsidized price of the cookstove in monthly instalments lasting up to six months. A local woman will be assigned to collect the instalments from households that find it difficult to pay the sum at once.

There were no negative comments raised by stakeholders in local stakeholder consultation meetings and due to the associated benefits stakeholders have appreciated the proposed project activity.

The project proponent has well planned ongoing communication with local stakeholders i.e. the ultimate end user of the ICS, as per monitoring plan the village level representatives will be periodically visiting the households to get the feedback on usage and if any complain or concern by end users on periodic basis. The periodic visit will also be performed for the sample survey as per monitoring plan. If any concern raised during project operation by end users, which requires local stakeholder consultation to gather the feedback will be conducted.

2.3 Environmental Impact

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

2.4 Public Comments

Following Public

Comment 1: Mr Rohit commented on section 1.17, “pls provide source and justify how the project meets " reduce fuel wood to generate 15.9 million tCO₂e and significant HAP reduction.”

Response 1: The project activity comprises of distribution of improved cookstoves which has better efficiency than the traditional cookstoves. The ICS distributed under project activity has potential to save 65% fuel than traditional cookstoves. The estimated emission reduction calculated based on number of Improved cookstoves to be distributed and fuel saving. The estimated annual average emission reduction potential due to project activity is calculated as 1.558 million tCO₂e. Greater the efficiency, lesser will be the fuel consumption and lesser will be Household air pollution. The sources and supportive for the same is provided to the VVB for cross check purposes.

Comment 2: Mr Rohit commented on section 1.17, “PP should provide evidences "Reduce the risk of mortality among infants and children under five years of age due to (1) acute lower respiratory illnesses (ALRI), such as pneumonia and bronchitis, the cause of mortality in 12% of children under five, and (2) burns resulting from children falling into open cooking fires. (SDG 3.2.1, 3.2.2)””

Response 2: Reduced HAP automatically improves the health condition of the households including children. Thus, reducing the risk of getting with acute lower respiratory diseases or other illness related to HAP. The ICS is designed in such a way that major accidents caused by open fire can be reduced. The ICS is potable compact and safer to use as compared to open fires. The supportive for the same is provided to the VVB for cross check purposes. The impact of efficiency on particulate matters, CO emission and safety level can be checked from classification of ICS technology of Appendix 1 of applied approved methodology.

Comment 3: Mr Rohit commented on section 1.13. “PP did not provide the source for the statement 50 to 60% HHs in rural India still cooking traditional biomass stoves, however, the Indian government claimed that almost all the HHs are provided with LPG connection. thus, this is misleading statement”

Response 3: Sufficient amount of information on the cooking practices of rural households of India are available in the public domain. The supportive for the same has already been provided to the VVB. The same can be checked using below weblink as well

<https://en.gaonconnection.com/cooking-gas-lpg-firewood-ujjwala-scheme-rural-india-women-health-risks-air-pollution/>

<https://www.downtoearth.org.in/news/energy/580-million-indians-will-use-solid-fuel-to-cook-in-2030-61619>

Comment 4: Mr Rohit commented on section 1.11, “how PP has mentioned that the project ICS is having 7 years lifetime, should provide test certificate from a reputed agency to justify the lifetime of project ICS”

Response 4: The life of the project ICS is 7 years as per the manufacturer specifications. The supportive for the same has been furnished to VVB.

Comment 5: Mr Rohit commented on page 16,“ page 16, the weblink is not working "1 http://mospi.nic.in/sites/default/files/publication_reports/410_2_part2_final.pdf”

Response 5: The weblink has been replaced with new and working links in the VCS PD updated version.

Comment 6: Mr Rohit commented on section 1.15.2, “In India, a lots of ICS project (more then 50 -80 million) are already implemented and currently under validation or verification process under different certifying bodies (GS, VCS, CDM etc), so how this project is happening us questionable”

Response 6: The ICS projects currently implemented in host country has very limited penetration and all ICS distributed under GS/CDM/VCS projects are some under CSR, no purchase of ICS is happening in host country otherwise. Despite government effort to increase clean fuel usage in host country, given affordability of end users it is estimated that even till 2030 more than 550 million will use solid fuel for cooking purpose (<https://www.downtoearth.org.in/news/energy/580-million-indians-will-use-solid-fuel-to-cook-in-2030-61619>). The current potential for ICS in host country is much higher than planned under existing and upcoming projects. Hence, the PP has appropriately identified potential users under the proposed project activity.

Comment 7: Mr Rohit commented on section 1.14, “indian govt provided marginal and low income HHs free LPG connections, PP’s statement is misleading.”

Response 7: As stated in above response, the government has policy to increase the share of clean fuel for cooking, however the penetration level is still very low in rural areas and even people having LPG connection are using solid fuel majorly (<https://www.sciencedirect.com/science/article/abs/pii/S2214629621001055>)

Comment 8: Mr Rohit commented “The PDD title is gender sensitive and biased , does not reflect equal gender , people like Neha Juneja are pseudo feminist's, and thus these types of people shd not be encouraged”

Response 7: The project activity aims at distributing improved cookstoves to the different households of India. It is a known fact that in most of the cases women spend more time in the kitchen than men. Women globally work hard to maintain a balance between work and family. They look after the house, cook and work for the family. *The project will help women to reduce the proportion of time women spend on unpaid domestic work related to collection of firewood, and cooking meals on inefficient traditional cookstoves.* So, the title is apt for the project activity.

2.5 AFOLU-Specific Safeguards

The proposed grouped project activity is a non AFOLU project. Thus, this section is not applicable.

3 APPLICATION OF METHODOLOGY

3.1 Title and Reference of Methodology

Following approved baseline & monitoring methodology is applied;

Methodology: VMR0006- Methodology for Installation of High Efficiency Firewood Cookstoves

Version: 1.1

Sectoral Scope: 03

Tools:

"TOOL01: Tool for the demonstration and assessment of additionality “; Version-07, EB70, Annex 8.

“TOOL30: Calculation of the fraction of non-renewable biomass”; Version-03, EB 108, Annex 11

Standard:

Sampling and surveys for CDM project activities and programmes of activities, Version-09

3.2 Applicability of Methodology

The methodology measures below constitute the justification for the choice of the selected methodology by showing that project instances under the project activity meets each applicability condition of the methodology.

S. No	VCS Methodology requirement	Project justification
1	The project stove is a single pot or multi pot portable or an in-situ cookstove using only woody biomass; Additional requirement to demonstrate that the biomass used is solely renewable biomass in case project activities replacing baseline stoves using fossil fuel	The proposed instances will distribute high efficiency single-pot improved cook stove for thermal application, which will replace inefficient traditional cookstoves or open cooking practices, leading to saving of non-renewable biomass. The ICS to be distributed under the project activity is Greenway Jumbo stoves. All ICS in this project will replace existing traditional wood stoves; therefore, no greenfield installations are included. Further, the project activity will utilize only biomass under project scenario. This criterion will be checked from data recorded on the baseline stove used prior to ICS installation.
2	Project activities shall be implemented in domestic premises or in community-based kitchens	The project activity will replace traditional wood-based stove in individual households in rural/semi urban areas.
3	The project stove shall have specified high-power thermal efficiency of at least 25% per the manufacturer's specifications and shall exclusively use woody biomass and can be single pot or multi-pot; in case of project stove replacing fossil fuel baseline stove, it shall exclusively use renewable biomass	The Greenway Jumbo single pot, portable improved cooking stoves planned to be distributed have a specified efficiency of 38% as per water boiling test in compliance with Tier II and above as per ISO as tested and certified by third party.

4	Non-renewable biomass has been used in the project region since 31 December 1989, using survey methods or referring to published literature, official reports or statistics	Proof that biomass has been used in the project region, i.e., in the host country India since 31 December 1989 is available through widespread documentation. Report by National sample survey organization (NSSO), department of statistics, Government of India reveals that 79% of the rural households in India were dependent of firewood and chips in the year 1987-88². Also NSSO reported 78% of rural households to be dependent on firewood and chips in the year 1993-94³. National sample survey organization, Government of India reveals that 75% of the rural households in rural India were primarily dependent of fuelwood and chips⁴. Fuel wood is the main source of energy in rural areas. Wood energy is mainly used as fuel for cooking at household. The above clearly shows that the rural areas in the host country are dependent on biomass since and before 1989 with not much change in the trend which clearly depicts the dependence of the people of the host country on woody biomass as fuel for meeting thermal energy requirement for cooking at households.
5	For the specific case of biomass residues processed as a fuel (e.g. briquettes, wood chips), it shall be demonstrated that: (a) It is produced using exclusively renewable biomass (more than one type of	The ICS is introduced as energy efficiency measure to replace baseline stoves and reduce the use of non-renewable biomass for combustion. The consumption of the fuel used in the project activity will be monitored. The same fuel will be used by the households that

² https://mpa.ub.uni-muenchen.de/83566/1/MPRA_paper_83566.pdf

³ Energy sources of Indian households for cooking and lighting, NSS 66th round.

⁴ https://mpa.ub.uni-muenchen.de/83566/1/MPRA_paper_83566.pdf

	biomass may be used). (b) The consumption of the fuel should be monitored during the crediting period and (c) Energy use for renewable biomass processing (e.g. shredding and compacting in the case of briquetting) may be considered as equivalent to the upstream emissions associated with the processing of the displaced fossil fuel and hence disregarded	was used in the baseline during the project phase too. Fuel like briquettes, wood chips, etc will be used.
6	The project description shall explain the proposed method for distribution of project devices including the method to avoid double counting of emission reductions such as unique identifications of product and end-user locations (e.g. programme logo).	A record keeping system and unique identification of the project device will be used. This will include user name, user identification number and address/location of the user's house and distribution date. The record keeping system will ensure that each ICS can be traced to project instances to avoid double counting.
7	The project description shall also explain how the proposed procedures prevent double counting of emission reductions, for example to avoid that project stove manufacturers, wholesale providers or others claim credit for emission reductions from the project devices.	The project proponent will sign an end user agreement with individual household/user to ensure only PP can claim the emission reduction. A default distribution agreement for end users including the provision that emission reductions generated by the stove are owned by the PP will be provided for each user.

3.3 Project Boundary

Source		Gas	Included?	Justification/Explanation
Baseline	Emission from use of non-renewable biomass/Fossil fuel	CO ₂	Yes	Major source
		CH ₄	Yes	Major source
		N ₂ O	Yes	Major source
Project	Emission from use of non-renewable biomass	CO ₂	Yes	Major source
		CH ₄	Yes	Major source
		N ₂ O	Yes	Major source
		CO ₂	No	Not considered as briquettes usage is not expected in project scenario

Source		Gas	Included?	Justification/Explanation
	Emission from manufacturing of briquettes	CH ₄	No	Not considered as briquettes usage is not expected in project scenario
		N ₂ O	No	Not considered as briquettes usage is not expected in project scenario

3.4 Baseline Scenario

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

The government has policy to increase the share of clean fuel for cooking i.e. LPG, however the penetration level is still very low in rural areas and even people having LPG connection are using solid fuel majorly

(<https://www.sciencedirect.com/science/article/abs/pii/S2214629621001055>).

The National Family Health Survey (NFHS-5) 2019-2021 is a nationwide survey conducted in India to collect comprehensive data on various aspects of population health, family planning, and nutrition. The survey was conducted by the International Institute for Population Sciences (IIPS) under the Ministry of Health and Family Welfare India.

As per the NHFS-5 only 26.1% percent of rural households of Odisha use clean fuels (Electricity, LPG/natural gas, biogas) for cooking. The remaining 73.7% households depend on solid fuels for meeting their cooking needs. Of the households dependent on solid fuels 99.7% use traditional chullahs and open fires. Only 0.3% of these households have access to a stove (improved).

Based on this recent evidence (2019-21) by the Government of India, a major part (99.7%) of rural households in the state still depend on traditional cooking technologies such as chullah or open fires.

https://matrujyoti.in/public/assets/images/NFHS-5_Odisha_Factsheet.pdf

The above conclusion is also in line with Appendix of applied approved methodology VMR006, where in only 12% households using clean fuel for cooking in rural area. Hence, it can be concluded that in absence of the project activity the end users will continue to use non-renewable biomass for cooking to meet thermal energy requirement for cooking purpose, which is also supported by fNRB calculation.

3.5 Additionality

The methodology uses activity method for the demonstration of additionality.

Activity Method

Step 1: Regulatory Surplus

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

Households may only participate voluntarily in this project. It is hereby confirmed that the proposed project is a voluntary coordinated action by SDG 13 Ventures Pte Ltd.

Step 2: Positive List

The project Proponent will distribute the cookstove at subsidized rate, hence there will be revenue stream apart from the sale of GHG credits. Therefore, PP chosen option 3 for demonstration of additionality.

The project is not implemented as part of government schemes or supported by multilateral funds. The project did not apply any methodology deviations.

Step 3: Project Method

The “Tool for demonstration and assessment of additionality” Version-7.0.0 EB 70 Annex-08 is applied to demonstrate additionality

The Tool provides for a step-wise approach to demonstrate and assess additionality. These Steps include:

Step 0- Demonstration whether the proposed project activity is the first-of-its-kind

Step 1- Identification of alternatives to the project activity consistent with current laws and regulations

Step 2. Investment analysis

Step 3: Barrier analysis

Step 4: Common practice analysis

Step 0- Demonstration whether the proposed project activity is the first-of-its-kind

The proposed project activity is not first of its kind in host country.

Step 1: Identification of alternatives to the project activity consistent with current laws and regulations

Sub-step 1a: Define alternatives to the project activity:

The project activity is to distribute improved cookstove to individual households to traditional stoves, the alternatives to the project activity are

- (a) The proposed project activity undertaken without being registered as a VCS project activity;
- (c) Continuation of the current situation.

Outcome of Step 1a: Identified realistic and credible alternative scenario(s) to the project activity

The alternative identified are

- (a) The proposed project activity undertaken without being registered as a VCS project activity;
- (c) Continuation of the current situation.

Sub-step 1b: Consistency with mandatory laws and regulations:

There are no policies in host country to regulate fuel usage for cooking at household level and both the alternative identified above are in compliance in host country rule and regulations.

Outcome of Step 1b: Identified realistic and credible alternative scenario(s) to the project activity that are in compliance with mandatory legislation and regulations taking into account the enforcement in the region or country and EB decisions on national and/or sectoral policies and regulations.

Both the alternative identified above are in compliance with host country regulation.

Step 2: Investment analysis

To conduct the investment analysis, use the following Sub-steps:

Sub-step 2a: Determine appropriate analysis method

As the project proponent will sale ICS at a lower price than purchase cost of ICS and there are no other economic benefit than sale of VERs, hence a simple cost analysis is chosen by PP.

Sub-step 2b: Option I. Apply simple cost analysis

The proposed project intends to distribute the ICS at more than 60% subsidy to users i.e. individual households; hence financial return from the programme will be less than cost incurred. The purchase price of the ICS is 3499 INR, the same can be checked letter by supplier and from website as well—. Further the project proponent will hire a team for supply chain and maintenance and repair. The project activity is initially distributing the ICS to the households for an amount of 400 INR to 500 INR. From above it can be concluded that on each ICS there is a minimum loss of around 3,000 INR, hence without revenue from sale of VERs, the project activity is not financially viable. As the end-user does not benefit from a direct financial return and procuring ICSs requires capital, which is a barrier to rural/semi-urban consumers due to difficulties in accessing capital, a wide dissemination of ICSs in the Host Country is unlikely. The actions under the project will alleviate these barriers by promoting distribution of ICSs to end-

users at an affordable price. Hence, the project faces investment barrier and is considered to be additional.

Step 3: Barrier analysis:

Not chosen by PP.

Step 4: Common Practice Analysis:

As per information available in public domain the penetration level of ICS is very low in host country India and project activity is not a common practice. The ICS distributed as off now are under other GHG programme or under environmental initiative of CSR. As per appendix 1 of applied approved methodology access to clean fuel in rural India is around 22%, which mainly include LPG, hence the project activity is not a common practice.

As each ICS has costs associated with its purchase and distribution and awareness generation, this programme will not occur in absence of the VCS revenue. The action is not financially viable without the support of revenues from the sale of VERs. The end-users for the ICS are currently using crude devices, which indicates and exacerbates the cycle of poverty/suppressed incomes. The potential users for ICS are typically lower income with the problem (lack of ICS) seen more as a woman's problem thereby relegating it lower in the priority order for household expenditures/investments. The actions under the project will alleviate these barriers by promoting distribution of ICSs to end-users at upwards of an 60% subsidy, thereby making their ownership and subsequent impact possible.

3.6 Methodology Deviations

The project activity has not taken any deviation from the applied approved methodology VMR0006, version 1.1.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

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

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

Where,

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

and;

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

Where,

- B_{y,savings,i,j} = Quantity of woody biomass that is saved in tonnes per improved cook stove of 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)
- fNRB = Fraction of woody biomass that can be established as non-renewable biomass
- EF_{wf,CO₂} = CO₂ emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 tCO₂/TJ)
- EF_{wf,non CO₂} = 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 quantify of woody biomass saved B_{y,savings,i,j} due to implementation of improved cook stoves will be estimated using Equations 4 of applied approved methodology.

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

Where,

- η_{new,i,j} = Efficiency of the improved cookstove type i and batch j determined through water boiling test (WBT) during year y, Alternatively, efficiency may be determined using Equation 5 of applied approved methodology

$B_{y=1, \text{new}, i, \text{survey}}$ = Annual quantity of woody biomass used by improved cook stoves 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

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

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

Where,

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

$(DF_n)^{y-1}$ = Discount factor to account for efficiency loss of project cookstove per year of operation (fraction). This value may be based on actual monitoring or based on manufacturer's declaration on expected loss in efficiency or through publicly available literature on relevant industry standards Alternatively default value of 0.99 efficiency loss per year can be considered.

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

In order to address the potential source of leakage which can be attributed to diversion of non-renewable biomass saved by project devices to non-project households which previously used renewable biomass; a net to gross adjustment factor of 0.95 is applied to $ER_{y, i, j}$.

For projects opting for $B_{y=1, \text{new}, i, j, \text{survey}}$, it shall be demonstrated that the consumption of biomass for individual project stoves can be measured exclusive of one another.

Determination of the Share of Non-Renewable Biomass

As per the methodological tool "Calculation of the fraction of non-renewable biomass", version 03, paragraph 9, equation 01, the fraction of woody biomass that can be established as non-renewable is:

$$f_{NRB} = \frac{NRB}{NRB + RB}$$

Where,

f_{NRB} = Fraction of non-renewable biomass in the applicable area in the relevant period

NRB = Quantity of non-renewable biomass consumed in the applicable area in the relevant period (tonnes)

RB = Quantity of renewable biomass that is available on a sustainable basis in the applicable area in the relevant period

Step 1: Estimation of renewable biomass (RB) as per equation (7) of the fNRB tool

$$RB = \sum (MAI_{forest,i} \times (F_{forest,i} - P_{forest,i})) + \sum (MAI_{other,i} \times (F_{other,i} - P_{other,i}))$$

Where.

$MAI_{forest,i}$	= Mean Annual Increment of woody biomass growth per hectare in sub-category i of forest areas in the relevant period (tonnes/ha/yr)
$MAI_{other,i}$	= Mean Annual Increment of woody biomass growth per hectare in sub-category i of other land areas in the relevant period (tonnes/ha/yr)
$F_{forest,i}$	= Extent of forest in sub-category i in the relevant period (ha)
$F_{other,i}$	= Extent of other land in sub-category i in the relevant period (ha)
$P_{forest,i}$	= Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within forest areas (in sub-category i) in the relevant period (ha)
$P_{other,i}$	= Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within other wooded land areas (in sub-category i) in the relevant period (ha)
i	= Sub-category i of forest areas and other land areas

RB = 896,890.41 t/yr (Please refer the fNRB sheet for detailed calculation)

Step 2: Estimation of consumption of woody biomass (H). As per the applied methodological tool:

$$H = HW \times N + CE + N$$

Where

HW	= Average consumption of wood fuel per household, including fuelwood and charcoal, in the applicable area in the relevant period (tonnes//household)
CE	= Commercial woody biomass consumption for energy applications (e.g. commercial, industrial or institutional uses of woody biomass in ovens, boilers etc.) that are extracted from forests or other land areas in the applicable area in the relevant period (tonnes)
NE	= Commercial woody biomass consumption for non-energy applications (e.g. construction, furniture) that are extracted from forests or other land areas in the applicable area in the relevant period (tonnes)

N = Number of households consuming wood fuel within the applicable area in the relevant period (number)

Further calculating the value of H comes out to be 3,139,736.5 t/year. Please refer the fNRB sheet for detailed calculations

Step 3: Estimation of quantity of non-renewable biomass (NRB) (t/year). As per the applied methodological tool.

$$\text{NRB} = \text{H} - \text{RB}$$

Where,

H = Total consumption of woody biomass in the applicable area in the relevant period (tonnes)

Thus

$$\text{NRB} = 3,139,736.5 - 896,890.41$$

$$\text{NRB} = 2,242,846.09 \text{ t/yr}$$

Thus, as per equation 1 of tool 30, version 03

$$f\text{NRB} = \frac{\text{NRB}}{\text{NRB} + \text{RB}}$$

$$f\text{NRB} = 2,242,846.09 / (2,242,846.09 + 896,890.41)$$

$$f\text{NRB} = 71.4\%$$

Note: Please refer to the fNRB sheet for detailed calculations.

4.2 Project Emissions

The methodology does not account for baseline emissions and project emissions separately but instead quantifies net emission reduction achieved by the project. Please see section 4.4

4.3 Leakage

Leakage is already accounted in calculation of emission reduction by adjusting with default value of 0.95.

4.4 Net GHG Emission Reductions and Removals

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

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

Where,

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

and;

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

Where,

- $B_{y,savings,i,j}$ = Quantity of woody biomass that is saved in tonnes per improved cook stove of 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)
- fNRB = Fraction of woody biomass that can be established as non-renewable biomass (0.714)
- 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 quantify of woody biomass saved $B_{y,savings,i,j}$ due to implementation of improved cook stoves will be estimated using Equations 4 of applied approved methodology.

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

Where,

$\eta_{new,i,j}$ = Efficiency of the improved cookstove type i and batch j determined through water boiling test (WBT) during year y, Alternatively, efficiency may be determined using Equation 5 of applied approved methodology

$B_{y=1, new,i,survey}$ = Annual quantity of woody biomass used by improved cook stoves 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

Where the project households continue to use baseline cookstoves along with improved cookstoves, Bold shall be adjusted ex-post based on the percentage of project households found to continue such practice according to the following equation.

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

Where,

$B_{old,adjusted}$ = Adjusted Bold to account the ex-post usage of firewood in baseline cookstove(s) by project households in addition to improved cookstove (in tonnes per device)

μ_y = Adjusted Bold to account the ex-post usage of firewood in baseline cookstove(s) by project households in addition to improved cookstove (in tonnes per device)

For example considering 1 ICS distributed/ household, the number of ICS stoves will be 100,000 the saving is calculated as.

$$B_{y,saving,i} = 1.35 \times ((38\% / 10\%) - 1) = 3.78 \text{ tonnes/year}$$

Hence,

$$ER_y = 3.780 \times 0.0156 \times (112 + 26.23) \times 100,000 \times 0.714 \times 0.95$$

$$ER_y = 553,157 \text{ tCO}_2\text{e}$$

The efficiency of the project stoves is estimated using equation below taking $DF_n = 0.99$ default value per annum

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

Hence,

$$\text{Year 1} = 0.38 \times (0.99) \times 0.94 = 0.357$$

$$\text{Year 2} = 0.38 \times (0.99)^{2-1} \times 0.94 = 0.354$$

$$\text{Year 3} = 0.38 \times (0.99)^{3-1} \times 0.94 = 0.350$$

$$\text{Year 4} = 0.38 \times (0.99)^{4-1} \times 0.94 = 0.347$$

$$\text{Year 5} = 0.38 \times (0.99)^{5-1} \times 0.94 = 0.343$$

$$\text{Year 6} = 0.38 \times (0.99)^{6-1} \times 0.94 = 0.340$$

$$\text{Year 7} = 0.38 \times (0.99)^{7-1} \times 0.94 = 0.336$$

Therefore, the annual emission reduction considering 5 phase implementations i.e. 100,000 each year is estimated as below considering 10% dropouts of ICS distributed.

Year	Estimated baseline emissions or removals (tCO ₂ e)	Estimated project emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Estimated net GHG emission reductions or removals (tCO ₂ e)
2022-23	553,157	0	0	553,157
2023-24	1,010,460	0	0	1,010,460
2024-25	1,461,411	0	0	1,461,411
2025-26	1,906,075	0	0	1,906,075
2026-27	2,344,514	0	0	2,344,514
2027-28	2,223,635	0	0	2,223,635
2028-29	2,192,508	0	0	2,192,508
2029-30	1,741,557	0	0	1,741,557
2030-31	1,296,893	0	0	1,296,893
2031-32	858,453	0	0	858,453
Total	15,588,662	0	0	15,588,662

5 MONITORING

5.1 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 value as per applied approved methodology
Purpose of Data	Calculation of baseline emissions
Comments	The value is fixed ex-ante

Data / Parameter	EF_{wf,CO_2}
Data unit	tCO ₂ /TJ
Description	CO ₂ emission factor for the use of wood fuel in baseline scenario
Source of data	Default 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	$EF_{wf,non\ CO_2}$
Data unit	tCO ₂ /TJ
Description	CO ₂ emission factor for the use of wood fuel in baseline scenario
Source of data	Default 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}
Data unit	Fraction
Description	Efficiency of baseline cookstove
Source of data	Methodological default value
Value applied	Default value as per applied approved methodology VMR0006, v1.1
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	f_{NRB}
Data unit	Fraction
Description	Fraction of woody biomass that can be established as non-renewable biomass
Source of data	Calculate as per TOOL30: Calculation of the fraction of non-renewable biomass"; Version-03
Value applied	0.714
Justification of choice of data or description of measurement methods and procedures applied	The parameter will be determined ex-ante

Purpose of Data	Calculation of baseline emissions
Comments	--
Data / Parameter	η_P
Data unit	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	--

5.2 Data and Parameters Monitored

Data / Parameter	$N_{y,i,j}$
Data unit	Number
Description	Number of project devices of type I and batch j operating during year y
Source of data	Monitoring
Description of measurement methods and procedures to be applied	Measured directly or based on a representative sample. Sampling standard shall be used for determining the sample size to achieve 95/10 confidence precision according to the latest version of Standard for sampling and surveys for CDM project activities and programme of activities.
Frequency of monitoring/recording	At least once every two years
Value applied	For ex-ante emission reduction calculation, it is assumed that the project will distribute up to 500,000 ICS in phases i.e. 100,000 each year for first 5 years.

Monitoring equipment	Monitoring survey
QA/QC procedures to be applied	The project implementor shall maintain a distribution record to calculate this parameter.
Purpose of data	Calculation of baseline emissions
Calculation method	Proportion of operational stoves obtained from the survey is multiplied by the total commissioned stoves to arrive at this value
Comments	--

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:
Frequency of monitoring/recording	"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"
Value applied	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
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Not applicable

Purpose of data	Calculation of baseline emissions
Calculation method	As per eq. 5 of VMR0006, v1.1 $\eta_{new,i,j} = \eta_P \times (DF_n)^{y-1} \times 0.94$
Comments	--

Data / Parameter	$B_{y=1,new,i,j,survey}$
Data unit	Tonnes
Description	Annual quantity of woody biomass used by improved cookstoves in tonnes per device of type i and batch j, determined in the first year of the implementation of the project through a sample survey.
Source of data	Monitoring survey
Description of measurement methods and procedures to be applied	Minimum sample size of each type i and batch j should be in line with the latest version of Standard for sampling and surveys for CDM project activities and programme of activities or guidelines provided in methodology Section 8.4 option (b). Determined in the first year of the introduction of the devices (e.g. during the first year of the crediting period, $y=1$) through measurement campaigns at representative households and/or sample survey. Sample surveys to estimate this parameter, that are solely based on questionnaires or interviews (i.e. that do not implement measurement campaigns) may only be used if the following conditions are satisfied. (i) Baseline cookstoves have been completely decommissioned and only improved cookstoves are exclusively used in the project households; (ii) If multiple devices are used in the project, it is possible from the results of the survey questions to clearly differentiate the quantity of firewood being used by each device. In other words, if more than one device, or another device that consumes firewood, are in use in project households, then the sample survey needs to distinguish the quantity of firewood used by the project device and the other devices that use firewood.
Frequency of monitoring/recording	Determined in the first year of project implementation
Value applied	For ex-ante assumed 1.35 tonne/device/year
Monitoring equipment	Monitoring survey
QA/QC procedures to be applied	Not applicable

Purpose of data	Calculation of baseline emissions
Calculation method	Not applicable
Comments	--

Data / Parameter	Life Span
Data unit	Years
Description	Project promoters to state the operating lifetime of project device for projects opting Equation 5 for determining 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 applied	7
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Not applicable
Purpose of 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 Project Proponent 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 applied	01-June-2022
Monitoring equipment	Not applicable
QA/QC procedures to be applied	Not applicable
Purpose of data	Calculation of emission reduction
Calculation method	Not applicable
Comments	--

Data / Parameter	μ_y
Data unit	Fraction
Description	Adjustment to account for any continued use of pre-project devices during the year y
Source of data	Monitoring survey
Description of measurement methods and procedures to be applied	This parameter should be monitored using one of the following methods: If the baseline cookstoves are decommissioned and no longer used, as determined by the monitoring survey its value is 0 and Bold, adjusted is equal to Bold. If both the improved cookstove and baseline cookstoves are used together then surveys shall be conducted to record the average continued operation of baseline cookstoves in a sample of households. The surveys should be designed to capture the cooking habits and stove usage of households in the region, including quantification of use of baseline cookstoves, by formulating questions and/or collecting evidences to determine the frequency of usage of both the improved cookstoves and baseline cookstoves.
Frequency of monitoring/recording	At least once in 2 years

Value applied	1
Monitoring equipment	Monitoring survey
QA/QC procedures to be applied	A 95 /10 confidence / margin of error shall be achieved for the sampling parameter irrespective of annual / biennial monitoring frequency as per para 22 of Standard: Sampling and surveys for CDM project activities and programmes of activities, Version 09.0. In the case the desired precision is not met, lower bound values shall be used against repeating the survey to determine the operational fraction of stoves.
Purpose of data	Calculation of baseline emissions
Calculation method	Not applicable
Comments	--

5.3 Monitoring Plan

Sampling Plan:

The parameters listed in section 5.2 are monitored according to the designed monitoring plan. Monitoring of these parameters are required for calculation of actual GHG emission reduction archived by the project activity via ex post sampling survey. The share of operating stoves and the continued use of pre-project devices will be determined based on sampling procedures as outlined below. The PP will be responsible for conducting the sampling surveys and maintaining a database with all operating stoves.

No monitoring for leakage is required as it is already been accounted in the calculations. As per the Guideline for Sampling and Surveys for CDM Project Activities and Programme of Activities, version 04, the sampling plan is the following:

(a) Sampling Design

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

(i) Objective and reliability requirements:

The objective is to obtain an unbiased and reliable estimate of the proportion or mean value of the following key variables over the course of the crediting period. As per CDM Methodology AMS-II.G, 90/10 confidence/precision shall be applied for annual sampling requirement and 95/10 for biennial sampling inspection. As per guideline for Sampling and Surveys for CDM Project Activities and Programme of Activities, 90/10 confidence/precision to be adopted for small-scale project and 95/10 for large-scale project. Given that the size of the project is under the category of large projects, hence 95/10 confidence/precision shall be adopted for all parameters unless the average annual emission reductions of the project below the threshold.

Monitored parameters

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

(ii) Target Populations:

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

(ii) 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 same group of end users which is from households from rural/semi-urban areas. The projects are to be implemented in rural/semi-urban areas; thus, it is 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.

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

The sample frame refers to all the information sources on the Database. There are two primary mechanisms for data collection: the Registration Process for newly distributed/installed ICS and

the Monitoring Survey (which includes a household questionnaire and visual inspection of ICSs) that will be used throughout the lifetime of the ICS. The detailed information collected from Registration Process is used to populate the stoves Database and the Monitoring Survey follows “Sampling and Surveys for CDM Project Activities and Programme of Activities”, version 04.

As explained below (on section “Sampling Method”), to take the different characteristics of different project instances Implemented and ICS models into consideration, Project instances shall be grouped together to create a Primary Sampling Unit, which is homogenous. As per EB 86 Annex 04, Appendix-2, paragraph 1, for the use of a single sampling plan covering a group of projects, provided the homogeneity of population can be demonstrated, or differences are taken into account in the sample size calculation, a 95/5 confidence/precision is applied for biennial sampling.

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

1. The same ICS models

That is project with the same ICS model can therefore be grouped together and form a Primary Sampling Unit. In our case project has only one ICS model being implemented, thus will form only Primary Sampling Units.

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

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

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

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

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

project stove to meet 25% of the cooking needs of the household in which case the adjustment factor will be 0.75. Where a more precise data is available i.e. the thermal capacity of the project and pre-project devices and respective utilization hours, a weighted average adjustment factor may be used.

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

(iv) Sampling Method

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

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

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

$\mu_{y,i,j}$: 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.

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

Using the formulas in the section “Sample Size” below, the PP will randomly sample the required number of ICS from the primary sampling units. It is important to note that for $\mu_{y,i,j}$ where partial usage of both old stoves and project ICS are observed, for each household under sample cooking habits must be taken into consideration.

(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.

The procedure to determine the sample of households will ensure that they adequately represent the broader project population, minimizing sampling error. Using, a 95 per cent confidence level, and a 5 per cent margin of error, random samples will be selected from each Primary Sampling Unit. 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 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 depending on annual or biennial monitoring frequency. The $N_{y,i,j}$ and $\mu_{y,i,j}$ requires proportion/percentage parameters, however the wood consumption by ICS may have variation and will be 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.

For the registration purpose of project, option C shall be applied. For the first monitoring period, values from a pilot shall be applied. For the following monitoring periods, the estimates shall be adjusted taken into account the results of the previous monitoring period(s) or the result from recent pilot study, which is conducted after the previous monitoring periods.

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 (Total number of households/ICS)

p = Expected proportion

1.96 = Represents the 95% confidence required

(In the case of 90% confidence, 1.645 shall be used)

0.1 = Represents the 10% relative precision

The following assumptions are made to exemplify the sample size calculation for parameters: $N_{y,i,j}$ and $\mu_{y,i,j}$.

The PP envisage distribution of 500,000 ICSs over next five year. Hence, population size, N, is taken as 500,000 households/ICS (Assuming one ICS for one household).

It is expected at least 90% of ICS will be operational, hence the expected proportion p for $N_{y,i,j}$ is taken as 0.9.

Sample size calculation:

The calculation of the required sample size for each parameter in the first monitoring period is illustrated below for a 95/10 level of confidence and precision (for biennial monitoring periods the sample sizes will be recalculated using 95/5 confidence/precision values). In all cases a conservative approach is taken, however if for any parameter the required 95/10 confidence/precision is not met then the project proponent will randomly select an additional sample and collect further data from this sample to ensure the pooled data meet or exceed the required thresholds.

Parameter $N_{y,i,j}$: Based on the above assumptions, the resulting sampling size for a 95/10 confidence/precision is calculated as:

$$n \geq \frac{1.96^2 \times 500,000 \times 0.9 (1-0.9)}{(500,000-1) \times 0.1^2 \times 0.9^2 + 1.96^2 \times 0.9 (1-0.9)}$$

Which comes out to be

$$n \geq 42.68$$

$$n = 43$$

Therefore, in this case a sample size of 43 is to be sampled from each primary sampling unit.

In case the resulting sample size to achieve the desired confidence/precision levels is smaller than 30 ICS, a minimum sample size of 30 shall be chosen when the parameter of interest is a proportion in line with para 14 of Standard: Sampling and surveys for CDM project activities and programmes of activities, Version-09.

Parameter $B_{y=1,new,i,j,survey}$:

For the purposes of determining sample size in the first monitoring period, the efficiency of stoves will vary.

To estimate the sample size for parameter $B_{y=1,new,i,j,survey}$ the following equation is used:

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

Where,

$$V = (SD/\text{mean})^2$$

n = Sample size

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

Mean = Expected mean of ICS thermal efficiency

SD = Expected standard deviation

1.96 = Represents the 95% confidence required

(In the case of 90% confidence, 1.645 shall be used)

0.1 = Represents the 10% relative precision

Based on the above assumptions, the sample size calculation for a 95/10 confidence/precision would be

$$n \geq \frac{1.96^2 \times 500,000 \times (0.05/0.5)^2}{(500,000-1) \times 0.1^2 + 1.96^2 \times (0.05/0.5)}$$

Using above values, the sample size comes out to be 3.84 or 4.

As per sampling standard V09.0, the PP shall use a student's t distribution in case sample size is less than 30.

The PP may choose to use the same samples to monitor more than one parameter, where parameters have same units. Sampling more than one parameter within the same sample (household) helps reduce travel needs for monitoring and the associated costs. At the same time this approach ensures the random selection of samples for every parameter.

Oversampling is strongly encouraged, not only to compensate for any attrition, outliers or non-response associated with the sample, but also to prevent a situation at the analysis stage where the required reliability is not achieved and additional sampling efforts would be required. The sample size shown above will be adjusted upwards to account for non-responses, PP shall determine the appropriate non-responses rate based on previous experience.

Data Recording:

The distribution record including user information will be collected and recorded at the point of distribution by the staff or distributors. The information collected from the end-user will be transferred to an electronic database, which will be updated regularly. The distribution record carries all distribution information including the traditional stove type (charcoal stove/firewood

stove) used prior to ICS installation, name of representative member of household, phone number (if available and user-permitted for sharing), address etc. Likewise, monitoring records are transferred from each monitoring organization, if any, to the PP. PP will ensure that appropriate records are maintained for the project activity.

A record keeping system and unique identification of the project is made possible by user's information collected through the Beneficiary Agreement and compiled in distribution records. This will include user name, identification number and address/location of the user's house, stove unique serial code and distribution date. The record keeping system will ensure that each ICS can be traced to the project activity to avoid double counting.

The Monitoring Plan applied in this project involves a number of key elements that ensure that the PP have high-quality, unbiased and reliable information regarding the performance of the project in terms of implementation and outcomes, and for the purposes of calculating Verified Emission Reductions (VERs) on the basis of the amount of non-renewable biomass saved by the ICS in the project activity. The key elements are the following:

- Project database management
- Spot Checks of ICS
- Sample Plan for the Monitoring Survey
- Data Quality, Consistency and Duplication Checks
- Monitoring Reporting

Project Database Management:

The information collected will be stored in the electronic database available with PP and it will be updated on ongoing basis by trained staff. The database will be sortable by the information collected as per Registration Process and will be made available to the VVB at verification. The PP will verify accuracy and completeness and confirm that there is no double entry of serial numbers in the database. The PP will identify any discrepancy and the correct information will be entered into the database.

All partners will be required to conform with project design and monitoring systems designed which will cover the above mentioned role and responsibilities.

All technical staff responsible for installation and maintenance of the stoves will be trained in terms of the understanding the requirements of VCS on the monitoring system. The technical, operational and maintenance trainings provided for the personnel will be described in each monitoring report.

QA/QC procedure:

Trained field staff will randomly select households included in the database and visit them to cross-check the information on the database with the factual evidence in the field. Any inconsistencies found (e.g. change in the address of a user) will be updated on the database, and in the case ICSs are found to be no longer in use, they will be clearly marked as such and excluded from emission reductions calculations. The spot check will be performed during first year of operation of the project/ICS, wherein random selection of household will be done through central database system, afterwards a team will visit to each household selected and will confirm the information as per registered database. In case any change in information the same will be updated and an action will be decided based on changes observed. These spot checks will also be used as part of sample required establishing the ICS in operation and if any use of pre-project devices along with ICS.

Local partners and PP will coordinate with the users of ICS directly or through its representative to ensure that all requirements with respect to VCS project, such as assisting with validation and registration, record keeping, monitoring and survey of households at a regular interval are met. In addition to implementing the activities as per design and complying with the requirements of the VCS standard, the management would also be responsible for the environmental integrity of the project activity.

Training, including that of field personnel, if needed to ensure monitoring activities are conducted effectively. This will include spot checking a random sample of homes with ICS to ensure the stoves are continuing to be used.

The PP will conduct training and capacity development for key personnel through its representative. This training is premised on documentation will include:

- Management Information Systems & Data Capture Process
- Stove Distribution Guidelines

Records of training and capacity development will be maintained for each member of staff's file.

Organizational Structure:

The project is managed by SDG13 Ventures Pte Ltd (SVPL) as the project proponent. The roles of the different actors and their responsibilities are shown in the table below.

Person/Entity	Responsibility
SVPL	• SVPL Management: oversight of management system & sign-off on ICS procurement and monitoring reports, review of competencies of team members • Technical review team: technical review of process and documentation and monitoring reports to SVPL management.

	VCS Compliance Manager/Consultant: writing PD & monitoring reports, ensuring compliance with VCS rules
Local partner	- Oversee operation of distribution centres; execution of set up activities; works with project manager on all planning; reports to SVPL. - Project Manager: project planning and management; issue and risk management; execution of set up activities such as recruitment and training; reporting of monitoring data; - Logistics Manager: planning; identification of target households; contractor management; overall day to day management of installation staff; weekly and monthly reporting. - Data administrators: monitoring database management; accounting; data reconciliations; monthly reporting; - Pre- & Post-distribution data collection: conveying project messages; selling the project; signing up householders wanting a stove; sign up data capture; distribution data capture - Distribution team: management of distribution process; ensuring quality stove distributions; - Monitoring team: gathering compliance monitoring data; gathering marketing data; data input
SVPL assesses the competencies of individuals responsible for each of the roles stated above.	
Manufacturing and logistics	Overall responsibility for manufacturing and logistics lies with the supplier and local partners. The process is as follows: Depending on the stove model, complete stoves or components for the stoves are: - Manufactured (some imported, others produced locally) by a stove manufacturer - Stoves are distributed to warehouses within project region - coordinate the distribution of stoves to recipient households
Household identification	A process for identifying households is managed by local partner. This involves working with local community leaders and other partners to help identify recipient households suitable for the distribution of a stove;

	• In partnership with community leaders, NGOs and other local organizations, local partner will initiate a communication process to ensure that households understand the benefits of the stoves, that cultural issues are addressed and that users are trained in the optimal use and performance of the stove; • Local partner's pre-distribution teams visit recipient communities in each region and ensure recipients understand and acknowledge the conditions for participation in the project; • Each stove is assigned a unique distribution number chronologically to avoid any double counting
Distribution	• Local partner train stove distribution teams to distribute stoves • Coordinate the receipt of stoves and components in the distribution process • Local partner will be trained in the distribution of the stove to a standardized delivery and communication procedure • Local partner will be responsible for physically distributing the ICSs to the recipient household
Data Capture	• Local partner checks the quality of ICS and record keeping work • If the work is satisfactory, distribution data is collected by the local partner/ SVPL representative, which includes: ▪ Username: the household family name, plus identification number of the ICS recipient (if available) ▪ Location: the address and/or physical location description (i.e. village) of the household, plus a GPS location reference (if available and accurate) ▪ Date and time of collection of ICS by user. • Distribution data is collected by the local partner and recorded/archived. The database will include a unique reference number for each stove
Monitoring	Monitoring activities will be conducted as follows: • Surveys completed in the field by trained local monitoring teams • Data captured by the monitoring teams is passed to SVPL data administration team • Data is checked for completeness, consistency and accuracy

	• Project manager summarizes data in a report to the SVPL compliance manager • Compliance manager writes monitoring reports for each monitoring period • Technical review by in-house technical team
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