Global Cookstove Program (EKI – Pink City)

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Summary:

LGAI Technological Center (hereinafter referred to as Applus+ Certification) is contracted by M/s EKI Energy Services Limited to conduct the joint validation and verification of the project "Global Cookstove Program (EKI – Pink City)", VCS ID 2940[1] against VCS standard version 4.4/7(b)/

The project's design description, baseline, monitoring plan, and compliance with applicable VCS and host party criteria are all confirmed as part of the joint validation and verification process. The monitoring plan of the Joint PD and MR (Project ID 2940) is also implemented, and the monitoring methodology is used in accordance with the VCS methodology VMR006 "Methodology for Installation of High Efficiency Firewood Cookstoves", Version 1.1/6/ of the methodology. A site visit was performed to confirm the information provide by PP/9/.

The main purpose of the project is the distribution of fuel-efficient improved cook stoves (ICS) in the India, presently distributed in Dhar, Barwani and Mandal district, Madhya Pradesh state of India. The Improved cookstove stoves distributed through this project have replaced the low-efficient traditional cookstoves. Through this project, the distribution, and installation of high thermal efficient improved cook stoves (ICS) has been undertaken for households. The ICS burns wood more efficiently thereby improving thermal energy transfer to pots, hence saving fuel wood and greenhouse gases. This will not only lead to reduce deforestation but will also reduce health hazards from indoor air (smoke) pollution, decrease in time spent by women and children for collecting the firewood.

The first crediting period's expected annual average emission reductions over a seven year period are 231,810 tCO_2e/year and 1,622,675 tCO_2e will be reduced during the course of the seven years of the crediting period. During the 1st monitoring period from 05-December-2022 to 30-April-2023 (inclusive of both the dates), 68,477 tCO_2e GHG emissions were reduced.

Applus+ certification now has enough proof to confirm that the stated criteria, as per VCS requirements and applied methodology, have been met after reviewing the joint Project Description and Monitoring report (Joint PD & MR) and additional documents pertaining to baseline and monitoring methodology, as well as after conducting background research, conducting on-site visit and follow-up interviews and speaking with stakeholders/9/.

In particular, the project's baseline, monitoring plan, and compliance with pertinent VCS and host party criteria was thoroughly and independently evaluated against the appropriate VCS requirements as part of the validation process. These are verified to ensure that the project design is legitimate, reasonable, and fits the specified requirements. All VCS initiatives must undergo validation, which is regarded vital to assure stakeholders of the project's quality and the expected generation of emission reductions. The goal of Applus+ certification is to carry out a thorough, impartial evaluation of the project activity's validation.

A review of the Joint PD & MR that is impartial and unbiased is what is meant by the validation scope. The VCS Program Guide (v4.3), VCS Standard (v4.4), Program Definitions (v4.3), Registration & Issuance Process (v4.3) applicable at the time are compared to the Joint PD & MR to ensure that the project complies with the requirements of the applied baseline and monitoring methodology, namely VMR0006, Version 1.1/6/.

Reviewing the Joint VCS PD & MR for the monitoring results and confirming that the monitoring methodology was applied in accordance with the monitoring plan and monitoring parameters which

are the main goals of the verification. After reviewing the ER sheet, it was confirmed that the reductions due to the anthropogenic emissions by sources are sufficient, conclusive, and presented in a clear and understandable way. In order to establish that the project has been implemented in line with design and conservative assumptions, as specified, the monitoring plan, Joint PD & MR, ER sheet, and the project's compliance with relevant VCS, and host party criteria were specifically checked.

Verification of project implementation and operation with regard to the Joint PD & MR, implemented monitoring plan with the Joint PD & MR, and applied baseline & monitoring methodology were all included in the scope of the verification. It was also verified that the actual monitoring systems and procedures are adhered to, as per the monitoring systems and procedures outlined in the monitoring plan. Identification of any substantial inaccuracies in the stated GHG emission reduction estimations and articulating a conclusion with a fair degree of assurance was part of the assessment. It is confirmed by the assessment team that the stated GHG emission data is appropriately supported by evidence.

This joint validation and verification have been carried out using a risk-based methodology. 05 Corrective Action Requests (CARs) and 04 Clarification Requests (CRs) were raised during joint validation and verification and successfully closed. 01 FAR is raised for the current validation and verification period.

The project has successfully been validated, verified, and further certified for emission reductions under VCS as it meets the criteria outlined by the Joint PD & MR template version 4.2, the VCS Standard version 4.4, and the applied methodology VMR0006, Version 1.1. The project is recommended for registration and issue after further confirmation of a combined positive validation and verification opinion showing the project complies with the relevant VCS requirements.

Our view refers to the projects' claimed GHG emissions, GHG emission reductions as a result, and to the project's legitimate baseline, monitoring, and supporting papers. Based on the information viewed and assessed, we confirm that the project activity " Global Cookstove Program (EKI – Pink City)" reduced emissions by 68,477 tCO_2e from 05-December-2022 to 30-April-2023, including both the days.

CONTENTS

1 INTRODUCTION

1.1 Objective

Applus+ Certification has been contracted by M/s EKI Energy Services Limited (project proponent)[2], to undertake the joint validation and verification of the project titled "Global Cookstove Program (EKI – Pink City)". The assessment team have reviewed the GHG data collected for the monitoring period from 05-December-2022 to 30-April-2023 (both days included) covered in this verification. The objective of the joint validation and verification is to have an independent third-party assessment of the Joint PD & MR/1/ and supporting documentation to ensure compliance with the rules, regulations and guidelines by VCS requirements. In particular;

- The project's baseline is assessed against "VMR0006 - Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.1"/6/
- The project's monitoring plan is assessed against "VMR0006 - Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.1"/6/
- The project's additionality justification is assessed against "VMR0006 - Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.1" /6/
- The projects compliance with, the requirements of Article 12 of the Kyoto Protocol, the CDM Modalities and Procedures as agreed in the Marrakech Accords under decision 3/CMP.1, the annexes to this decision, subsequent decisions and guidance made by COP/MOP & CDM Executive Board and other relevant rules, including the Host Country legislation and sustainability criteria along with VCS standard version 4.4 /7(b)/
- VCS standard version 4.4 /7(b)/
- VCS program guide version 4.3 /7(a)/

Validation and verification are a requirement for all VCS projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of verified carbon units (VCUs). This report contains the findings and resolutions from the validation and verification of the project activity.

1.2 Scope and Criteria

[2] VCS PD and MR mentions 2 project proponents in section 1.5 i.e. EKI Energy Services Limited and Pinkcity Tourist Village Complex Private Limited. Since, EKI has signed the proposal with the VVB, EKI is mentioned throughout the the report as the project proponent.

For Validation:

The validation scope is given as an independent and objective review of the project design, the project's baseline study and monitoring plan (VMR0006 Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.1)/6/ which are included in the VCS joint PD & MR/1/ and other relevant supporting documents. The scope of work covered in the validation is described as below:

- To validate whether the project activity meets the requirements of VCS Standard (v4.4) and VCS program guide (v4.3) including additionality, proof of title and compliance with local laws.
- To evaluate whether the baseline and monitoring plan are in conformance with the applied methodology from the VCS approved GHG program
- To confirm that the information presented are completed, consistent, transparent and free of omission or material error
- Background investigation and follow up interviews
- Issuance of draft validation report with CARs, CRs & FARs, if any
- Final validation opinion

The information in the VCS joint PD & MR is reviewed against the criteria of VCS Standard(v4.4); the VCS program guide(v4.3).

Applus+ Certification has performed validation based on a risk-based approach focusing mainly on the significant risks to meet the qualification criteria and the ability to generate Verified Carbon Units (VCUs).

For Verification:

The scope of the verification was the independent and objective review and ex-post determination of the monitored reductions in GHG emissions from "Global Cookstove Program (EKI – Pink City)". The verification of this project was based on the validated VCS joint project description & monitoring report and supporting documents submitted by the project proponent to the verification team. The documents were reviewed against the following guidance and protocols:

- VCS Program Guide (v4.3)/7(a)/
- VCS Standard (v4.4)/7(b)/
- VCS Program Definitions (v4.3)/7(c)/
- VCS Registration & Issuance Process (v4.3)/7(d)/
- VCS approved methodology VMR0006 (version 1.1)/6/

The validation & verification is not meant to provide any consulting towards the client. However, stated request for clarifications and/or corrective actions may provide input for improvement of the project design.

1.3 Reasonableness of Assumptions and Level of Assurance

The validation conclusion is based on reasonableness of the assumptions, limitations, and methods that support the statement about the outcome potentially achieved by the activities during operation and monitoring, provided that they may change during the mentioned stages of the project's development and operations.

The verification has been done with a reasonable level of assurance as selected by the PP about whether the reported GHG emissions reduction data is free from material misstatement.

During the validation process, VVB has ensured the reasonableness of all the assumptions/parameters by using random Sampling methods in line with Standard for Sampling and surveys for CDM project activities and programmes of activities, version 9/18/.

The verification strategy used by Applus+ Certification is based on an understanding of the risks involved in reporting GHG emission data and the mitigation measures put in place. The joint validation and verification team validated/verified the monitoring data on sample basis for all the parameters of the monitoring plan and confirms that the reported emission reductions are free from any type of material errors. More details on sampling are provided in section 2.1 of this report.

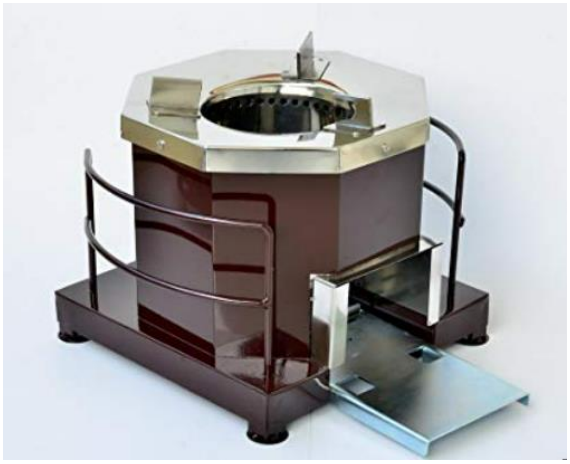
1.4 Summary Description of the Project

The project presently implemented in three districts of Madhya Pradesh state in India. As the target populations are unable to afford these stoves (ICS), project promoters have distributed ICS free of cost.

PP had informed the end-users in advance that the use of ICS generates carbon finance which in turn is used to cover the price of ICS and for recovering project implementation costs. EKI identified the potential locations where the majority of the population is using the traditional cookstoves, based on previous experiences in other projects, or available information or baseline survey, for the distribution of improved cookstoves and prioritized the appointment of a local implementation partner for the delivery of ICS and local men's and women's teams were deployed and trained for the implementation of ICS. VVB noted that this has created employment opportunities for 415 persons in manufacturing process and 98 persons during project implementation. This has also increased the income of local agents which was evident from the employment records submitted. PP has carried out awareness programs about the implementation of ICS to the local community through awareness programs.

The project locations for initial Project Activity Instances are located within three districts of Madhya Pradesh namely – Dhar, Barwani and Mandal. Project proponent has distributed 44,648 Improved Cook stoves (ICS) as confirmed based on the submitted monitoring database.

PP has considered one cookstove as one project activity instance for this grouped project activity. The first project activity instance was implemented on 05-December-2022 under this grouped project activity. 44,648 project activity instances (ICS) have been implemented as a part of this project activity.

TECHNICAL DETAILS			
A)	Cook Stove Type/Category	AGNEEKAA ECO MINI STOVE MODEL4 SE 	
		Natural Draft	
B)	Secondary Air Supply	Through Natural Draft	
C)	Stove Material Used	Body	Galvanized Iron Sheet
		Body Material Thickness	0.6 mm
		Combustion Chamber	Stainless Steel SS 202 grade
		Combustion Chamber Material Thickness	1 mm SS 202 grade
		Insulating Material	Thermal Wool
		Insulating Material Thickness	6 to 8 mm
		Top Plate	Stainless Steel SS 202 grade
		Top Plate Material Thickness	1 mm
D)	Physical Structure	External Dimension	Length: - 260 mm
			Width: - 260 mm
			Height: - 248 mm
		Combustion Chamber Dimension	Diameter: - 125 mm
E)	Grate Thickness	2 mm Material HR sheet	
F)	Weight Of the Stove	3.8 Kg	
G)	Type of Fuel Wood	Firewood 30 to 50 mm diameter	
H)	Feeding Process	Continuous Feeding Front Loading	
I)	Expected life of the stove	7 Years	
J)	Guarantee /Warranty Period	1 Year	
K)	Box Dimension	Outer Side Box Dimension	Length: - 300 mm

			Width: - 300 mm
			Height: - 270 mm
L)	Thermal Efficiency	36.42% Thermal efficiency is determined by the Indian Institute of Technology (IIT), Delhi/5/	

PP may adopt the modified stove models with improves efficiency for future distribution under the current grouped project activity.

Above mentioned technical details are checked with the Manufacturer's Technical specification/17/, and found correct. Same is confirmed during the onsite assessment.

The first crediting period's expected annual average emission reductions over a seven-year period are 231,810 tCO_2e per year and 1,622,675 tCO_2e over the course of the seven-year crediting period.

For current first monitoring period from 05-December-2022 to 30-April-2023, the project has reduced 68,477 tCO_2e of GHG emissions.

Based on an examination of the Joint PD & MR/01/, ER estimation and verification spreadsheet/02/, and ICS database/03/, the estimated emission reductions were validated and actual emission reductions were verified.

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

Joint validation and verification was conducted using Applus+ Certification's procedures in line with the requirements specified in the VCS standard Requirements, CDM Modalities & Procedures, the latest version of the CDM Validation and Verification Standard, and relevant decisions of the COP/MOP and the CDM EB and applying standard auditing techniques.

The implementation and operation of the project activity, as well as the measures employed to report emission reductions, must be evaluated and decided to meet with the criteria and pertinent recommendations provided by the VCS. The validation and verification process consists of the following three phases;

- A desk review of the Joint PD and MR.
- A physical site visit and follow-up interviews with project stakeholders.

- Findings were raised and resolved.

- The resolution of outstanding issues and issuance of the final report and opinion.

Since the project requires sampling, based on the provisions of CDM Standard: Sampling and surveys for CDM project activities and programmes of activities, version 9.0/18/, VVB has undertaken the following sampling plan with respect to the project validation and verification.

Para 30 and 31 of the CDM standard for project activity states:

In order to determine the sample size, the DOE should specify in advance, using its own professional judgement:

(a) **Acceptable quality level (AQL) or the level of assurance**, that is the proportion of acceptable discrepancies between the project participants' or the coordinating/managing entity's sample records and the DOE sample records (i.e. DOE field/on-site inspection results) (e.g. 1 per cent);

(b) **Unacceptable quality level (UQL),** that is the proportion of unacceptable discrepancies between the project participants' or the coordinating/managing entity's sample records and the DOE sample records, e.g. 20 per cent.

Para 31 says, The maximum errors associated with the determination indicated in paragraph 30 above should remain at levels indicated below:

(a) A 10 per cent chance that the DOE will wrongly reject the project participants' or the coordinating/managing entity's records (i.e. reject a set of records of acceptable quality);

(b) A 10 per cent chance that the DOE will wrongly accept the project participants' or the coordinating/managing entity's records (i.e. accept a set of records which is unacceptable).

Based on the above allowance given by the sampling standard, VVB selected 18 randomised households for acceptance surveying based on PP's database. The households were chosen from 107 households already surveyed by the PP. The choice of 18 households is the number of samples allowed as per the sampling standard with 1 acceptance number. Since this is an acceptance sampling, no oversampling was attempted by VVB, as it would go against the sampling guidance.

The identified beneficiaries based on the above criteria chosen randomly from the samples of beneficiary database by PP. The random sampling chosen by VVB led to selection from Mandla and Barwani districts. However, since this sampling is based on random function used and no sample from Dhar district was chosen by the system. VVB had no control/choice about the choosing the samples.

Table I: List of Beneficiaries randomly selected using random generators and Interviewed:

Name	ICS Sr. No.	Village	Tehsil	District
Ramchandra	GHG-23/L1/0648372	Tikariya	Tikariya	Mandla
Tito Bai Pusam	GHG-23/L3/0797990	Devri Parswada	Devri Parswada	Mandla
Manohar	GHG-22/L2/0607764	Thikri	Thikri	Barwani
Koushal Ram	GHG-23/L3/0783710	Githarmalpahri	Githarmalpahri	Mandla
Bhuri Bai	GHG-23/L3/0763456	Lawar	Lawar	Mandla
Savitri	GHG-23/L2/0741602	Harduli	Niwas	Mandla
Dumari Lal	GHG-23/L3/0725560	Sodgon	Sodganv	Mandla
Santulal	GHG-23/L3/0784128	Githar	Mogoan	Mandla
Varashs	GHG-23/L3/0764435	Silpuri	Silpuri	Mandla
Sharm Kumar	GHG-23/L3/0750189	Bhikhampur	Niwas	Mandla
Rajkumar Barmaiya	GHG-23/L4/0091710	Sagar	Balaghat	Mandla
Rohit	GHG-22/L2/0607412	Thikri	Thikri	Barwani
Maya Bai	GHG-23/L3/0797839	Dithori	Dithori	Mandla
Chandini	GHG-23/L1/0631939	Bisora	Niwas	Mandla
Rayti Bai	GHG-22/L2/0616064	Aawli	Pati	Barwani
Samarti	GHG-23/L3/0784712	Githarmalpahri	Githarmalpahri	Mandla
Rekha	GHG-23/L2/0741747	Sukhri	Niwas	Mandla
Shayamvati	GHG-23/L4/0092070	Poolsagar	Poolsagar	Mandla

The on-site interviews were conducted with the end users and following questions were asked to them;

1. General information of households
a. Interviewee Name
b. Government ID Number
c. Age / Gender
d. Household location
2. Old cookstove's situation and fuel
a. Are you the main user of the Old Cookstove at home?
a. How many people are there in your household?
b. What type and number of Stoves did you use? Three-stone fire, Self-built low efficient clay stove, Traditional low efficient stove or Others. If others, the type and number of stoves are
c. What kind of fuel did you use for the stove(s)? Charcoal, Firewood, or Others. If others, the kind of fuel is
d. Do you think the Cookstove will generate smokes and cause respiratory or itching issues?
3. Project cookstoves using situation
a. Are you the main user of the Project Cookstove at home?
b. When did you buy the Project Cookstove?
c. Do you know you have waived ownership of ERs before used the Cookstove?
d. What document do you sign or what information do you provide when you were distributed the Project Cookstove?

e. When did you start using the Project Cookstove?
f. Does your Project Cookstove have unique serial No.? if yes, the No. is
g. After using the Project Cookstove, did the distributor come to your home to check the use of the Project Cookstove?
h. Please specify the using frequency and cooking times.
i. What kind of fuel do you use for project stove? Charcoal, Firewood, or Others. If others, the kind of fuel is
j. What type and number of Project Stove are you using? If others, the type and number is
k. Are you still using old/other cookstove(s) after buying the Project Cookstove?
l. Do you think the Project Cookstove is cleaner than the old stove? If yes, the reason is Less smoke, less respiratory issues, less itching issues or others. If others, please specify.
m. Do you think using a Project Cookstove saves money or time compared to using the old stove?
n. Are there any difference in usage of project cookstove between dry and wet seasons?.

2.2 Document Review

The joint PD & MR and other related documents were reviewed as a part of the joint validation and verification process, which is described in detail in appendix 1 of this document. A assessment team uses a standard protocol to do the assessment of both validation and verification. The comparison of data from Joint PD & MR with data from additional sources, if available, the team's sectoral or local experience, and, if necessary, independent background investigations.

2.3 Interviews

The assessment team visited the site between 22-May-2023 to 23-May-2023, PP representatives and end users were questioned. The table includes information on the interviewees from PP side. ICS Users interviewed List is mentioned in the section 2.1 of this document.

Sr. No.	Name	Role	Organization
1	Samir Bagchi	Stove Distributer	Enviro Queen PVT LTD
2	Suvra Mujumdar	Project consultant	EKI Energy Services Limited
3	Monil Shrivastava	Project consultant	EKI Energy Services Limited
4	Pavan Patel	Project ICS distributor	Aransh Agro Tech
5	Soumitra Kulkarni	Director	GHG Reduction Technologies Pvt LTD

The topics discussed during the interview range from the project's general characteristics and implementation to its technical details, including design and technical specifications, project implementation status, project start date, location, baseline identification, monitoring survey, data recording and archiving procedures, and baseline stove use. The evaluation was created using the interview input together with the paperwork and observations.

2.4 Site Visits

Total 18 sample were visited as part of the site visit.

The assessment team visited the site between 22-May-2023 to 23-May-2023 to perform the following tasks:

- A review of information flows for generating, aggregating, and reporting the monitoring parameters;
- Interviews with relevant personnel to ascertain whether the operational and data collection procedures are carried out in accordance with the monitoring plan in the Joint PD and MR;
- A cross check of the information collected during the above-mentioned processes
- A comparison of the ICS functioning, observations of monitoring practices, applied methodology, including relevant tool(s), and, if appropriate, the applied standardized baseline, to the Joint PD and MR standards;
- A review of the calculations and presumptions used to calculate the GHG data and emission reductions;
- A determination of the quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.
- A check of thermal efficiency test performed by an independent third party.

In order to decrease audit risk to an acceptable low level and to obtain a fair degree of certainty for the current joint validation and verification, the assessment team has verified adequate appropriate audit evidences.

2.5 Resolution of Findings

The goal of this step is to identify, discuss, and draw conclusions about any problems that may affect the project activity's ability to reduce emissions or have an impact on the recording, monitoring, and reporting of those reductions. These problems may be related to the project description, technical specifications, baseline and additionality, monitoring parameters and monitoring plans, implementation status, or operations of the project activity. Based on the desk

review and site evaluation, this was carried out. The assessment team creates and/or maintains a validation and verification procedures (internal document) that documents conformities and non-conformities, which may include the following kinds of issues:

Corrective Action Request (CAR) is raised if one of the following occurs:

Non-compliance with the project description, applicability of monitoring methodology and its tools, additionality tools and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;

Non-compliance with the monitoring plan, the methodology or the standardized baseline are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;

Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;

Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;

Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

Clarification request (CL) is raised if:

Information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met.

Forward Action Requests (FARs) is raised if:

Information is not available during the present validation or verification process, which would need to be verified in subsequent verification or monitoring period.

05 Corrective Action Requests (CARs) and 04 Clarification Requests (CLs) were raised and successfully closed during the current joint validation and verification.

Appendix 3 contains all of the findings that are brought forward and shared with project participants during the assessment. The section also covers the project participants' responses, if any, and the assessment team's evaluation subsequently for any open findings.

2.5.1 Forward Action Requests

The project activity is undergoing Joint Validation and Verification under VCS, and 01 FAR is added. Details are presented in appendix 3 of this document.

3 VALIDATION FINDINGS

3.1 Project Details

Promoting improved cooking stoves (ICS) to residents of socially disadvantaged communities in India is the main focus of this project activity. In order to replace the traditional cooking stoves in the kitchen with stoves that are more efficient, the initiative aims to provide households with clean cooking alternatives. By substituting traditional cooking stoves with ICS, the project will reduce deforestation through less consumption of firewood. And, family members—particularly women—will be exposed to less indoor air pollution, saving money on health-related expenses.

There are no legal requirements, laws in India which mandates the distribution, use of ICS as VVB could not find any such regulation/laws from Government of India mandating the same. Also, use of firewood as a fuel is in compliance of existing practice of cooking in the project area[3]

The project activity started on 05-December-2022, which is also the date that the first beneficiary households sign the end user agreement, marking the beginning of the first batch distribution. Therefore, the ICS's commissioning occurs when it is delivered to the beneficiary household and put into service (i.e. start cooking). As a result, the project's commercial functioning begins on the same day that ICS is delivered to the beneficiary family.

The project state date is 05-December-2022 which was confirmed based on ICS distribution database/3/ and end user agreement submitted/3/.

A 07 year crediting period is expected to result in annual emission reductions of 231,810 tCO_2e and 1,622,675 tCO_2e over the seven-year crediting period, which runs from 05-December-2022 to 04-December-2029 (inclusive of both the dates).

Assessment team has verified the ownership of the cookstoves with the help of End user agreements[4] and found that it lies with the end-users. Moreover Ownerships of carbon rights is with the EKI Energy Services Limited which was confirmed with the help of end-user agreements and it is evident on the project webpage on VERRA website. This was also crosschecked during the onsite assessment interviews with the end users and PP. Same is mentioned in the joint PD and MR, Hence, accepted.

The current project has 2 project proponents and 2 other parties involved as a part of project activity. The details of the same are provided below:

[3] https://fsi.nic.in/documents/sfr_1987_hindi.pdf

[4] VVB has cross checked the submitted end user agreements. Each agreement has a serial no. that corresponds to ICS serial no which is distributed to the end user. Further, each document clearly mentions that ownership of ICS lies with the concerned end user while the carbon credit ownership is with EKI Energy Services Ltd. who is one of the project promoters.

Following is the details of the project proponents for the project activity however, the project ownership lies with EKI Energy Services Limited which is confirmed based on submitted End user agreement wherein EKI Energy Services Limited is mentioned as project participant as well as owner of carbon credits (VCUs).

Organization name	EKI Energy Services Limited
Contact person	Manish Dabkara
Title	Managing Director & Chief Executive Officer
Address	Office No 201, Plot No 48, Scheme 78, Vijay Nagar Part- II, Indore 452010, India
Telephone	+91 99075 34900
Email	ramkrishna.patil@enkingint.org and registry@enkingint.org

Organization name	Pinkcity Tourist Village Complex Private Limited.
Contact person	Prateek Jain
Title	Director
Address	9-Swaroop Colony, Ajmer Road, Jaipur-303021, Rajasthan, India.
Telephone	9828444888
Email	prateek@hemsecurities.com

Other two project participants involved in the project are the local distributor of the ICS in the project region and the ICS manufacturer. Details of the same are provided below which were checked with PP during the on-site visit.

Organization name	Aransh Agro Tech
Role in the project	Distributor
Contact person	Pavan Patel
Title	Owner/ Partner
Address	1782, Kripal Chouk, Gupteshwar, Jabalpur (Madhya Pradesh) - 482001
Telephone	8821930305

Email	aranshgroup@gmail.com

Organization name	GHG Reduction Technologies Pvt LTD
Role in the project	Manufacturing
Contact person	Mr. Soumitra Kulkarni
Title	Director
Address	A-11/2/3, Nagargoje Industries PVT LTD, SUmmet Compound Ambad, Nashik Maharashtra – 422010
Telephone	+91 982287213
Email	Soumitra.kulkarni@enkingint.org

The project will reduce 68,477 tCO_2e GHG emissions during the first monitoring period, which is from 05-December-2022 to 30-April-2023 (inclusive of both the dates).

PP has estimated ex-ante that each ICS will reduce emissions by approximately 5.96 tCO_2e (based on total emissions projected by the total number of cookstoves over complete crediting period), according to the computation in the section (net of leakage and continued use of the baseline stoves). The project proponent has commissioned 44,648 ICS during current monitoring period as confirmed based on ICS database. The actual emission reductions per ICS achieved through the distributed ICS is 1.61 tCO_2e.

The current initiative is a voluntary endeavour by the project proponent because there is no mandatory rule or regulation in the host country – India mandating the implementation of ICS. For the current project activity, the host country has not specified any specific lows/regulations with respect to cooking fuel/cooking practices. However, VVB confirmed during the discussion with the PP and other parties and based on the desk review that, the PP and the other parties are established as per the applicable laws and regulations and they follow labour laws, company act and other relevant acts and regulations as applicable for employment, stove manufacturing and distribution which are to be followed for project implementation. Thus, the project complies with all applicable statutes, laws, and regulatory frameworks . No Indian regulations, ordinances, or other regulatory frameworks are violated by the project.

Baseline scenario:

The baseline scenario that existed prior to the implementation of the project activity instances involves the use of conventional biomass fuel and inefficient cook stoves which use more

firewood and are with poor ventilation, which causes excessive indoor air pollution (IAP) and poses a serious health risk to women and children who spend a lot of time in the kitchen.

The baseline for this project is located in the same area where a similar project[5] has already been implemented. The assessment for the project validation of this project is conducted by the same VVB. During the interviews with the stakeholders as a part of audit, the stakeholders/end users have confirmed that they use and will continue to use the traditional cookstove with firewood as a fuel as it is the only option for them within the project area. Accordingly, the baseline for this project is the ongoing use of non-renewable wood fuel in traditional cookstoves or three-stone fire stove within a specific region. Further, PP while distributing the ICS has confirmed earlier about the baseline fuel used and the type of stove which further established the baseline scenario. This was checked during the interviews with PP representatives and the end users and VVB confirmed that a traditional cookstoves or three-stone fire stove is being used in project location with firewood as a fuel.

As per applied methodology, the baseline scenario is the continued use of non-renewable wood fuel (firewood/charcoal) or fossil fuel (coal/kerosene) by the target population to meet similar thermal energy needs as provided by project cookstoves in absence of project activity.

As confirmed by the assessment team during the on-site visit through interviews with the stakeholders/end users, in the absence of project activity the baseline scenario would have been continued use of non-renewable wood fuel – firewood by the end users to meet similar thermal energy needs and hence, it adheres to the applied methodology.

Assessment team further confirmed that;

Project activities are implemented in domestic premises at the household level as checked and confirmed during on-site audit;

Project participants have confirmed that there is no commercially sensitive information in the submitted documents.

With annual average ex-ante emission reductions of 231,810 tCO_2e , the project qualifies as 'project' under VERRA.

The project stoves have high-power thermal efficiency of 36.42% as confirmed based on the manufacturer's specifications and as verified from the third party assessment report provided by Indian Institute of Technology, Delhi. VVB further confirmed based on these documents that provided/distributed ICS exclusively use woody biomass (fuel wood/firewood) and are single pot;

[5] VCS 2942 which is awaiting registration with VERRA and is under assessment by the same VVB.

Since 31-December-1989, non-renewable biomass has been used in India, according to report by Forest survey of India in 1987[6] chapter III, households in India depend on forests for firewood. Thus confirming that firewood, a now renewable biomass is being used in pre 1989 period too.

The project has been implemented, in order to generate less GHG emissions from the baseline for later removal, reduction, or destruction.

The application for VCS registration by the project or any of its components has been confirmed in the Joint PD & MR/1/ and up to this point, it has not been registered/rejected under any GHG programme which is confirmed based on database available at Clean Development Mechanism (CDM), GS4GG (Gold Standard for Global Goals), Global Carbon Council (GCC) and there is no legal binding on the project promoter for project implementation. It is also confirmed based on the PP declaration that it will not claim any other form of credits.

As per clarification 1 of Clarification to VCS Program Rules And Requirements, scope 3 emission double claiming provisions are delayed and will be applicable from 01-January-2024. Hence, same are not considered and discussed here.

The assessment team affirms that the description provided in the Joint PD & MR is accurate, complete, and provides an understanding of the nature of the project based on its evaluation through review of pertinent documentation (as cited above), and the project has been implemented as described in the Joint PD & MR.

For the inclusion of new project activity instances i.e., ICS, the project proponent ensures that it meets the eligibility criteria below:

No.	Criterion	How the new project activity instances comply	VVB assessment
1	Meet the applicability conditions set out in the methodology applied to the project	New project activity instances (Energy Efficient Cook Stoves) will meet the applicability conditions set out in Section 3.4.2 below, where the target of the end-user is household and the ICS deployed is at least 25% of thermal efficiency.	PP has distributed ICS with an efficiency of 36.42% and since each ICS is treated as a new instance. Hence applicable and accepted
2	Use the technologies or measures specified in the project description.	The technology used for the project activity is energy-efficient cookstoves. Only energy efficient cook stoves are to be adopted in the project by replacing traditional cookstoves in households.	PP has distributed only one model of ICS which is energy efficient (verified from 3rd part testing report (IIT Delhi)). Hence applicable and accepted.

[6] https://fsi.nic.in/documents/sfr_1987_hindi.pdf

3	Apply the technologies or measures in the same manner as specified in the project description.	Only energy efficient cook stoves are to be adopted in the project by replacing traditional cook stoves in households. and same will be provided at free of cost.	PP has distributed only one model of ICS which is energy efficient (verified from 3rd part testing report (IIT Delhi)). Also it was checked and confirmed by the VVB on the basis of the end user agreement/3/ and on site interviews of the end users that the ICS were distributed free of cost. Hence applicable and accepted.
4	Are subject to the baseline scenario determined in the project description for the specified project activity and geographic area.	The new project activity instances will be installed within India subject to the same baseline scenario determined in Section 3.4.2 below.	All the cookstoves are distributed within India. Hence applicable and accepted.
5	Have characteristics with respect to additionality that are consistent with the initial instances for the specified project activity and geographic area.	All new project activity instances will use the activity method for demonstration of additionality. Step 1: Regulatory Surplus There is no mandated government programme or policy in the host country of this project ensuring the distribution of new energy efficient cook stoves for each project activity instance. Step 2: Positive List The inclusion of new project activity instances will comply with the positive list as it satisfies criterion 1 where it meets all the applicability conditions of the methodology.	Since each instance is within India and there is no mandated government programme in host country for distribution of cookstove. VVB noted that in year 2009, government of Inda had launched a "National Biomass Cook Stove Programme" but its end date was year 2017[7]. As of now, government of India is not running any

[7] https://policy.asiapacificenergy.org/node/3661

			programme/having a regulation for efficient cookstoves. Hence accepted and Applicable. The inclusion of new project activity instances complies with the positive list as it satisfies criterion 1 where it meets all the applicability conditions of the methodology.
6	Where a capacity limit applies to a project activity included in the project, no project activity instance shall exceed such limit. Further, no single cluster of project activity instances shall exceed the capacity limit, determined as follows: Each project activity instance that exceeds one percent of the capacity limit shall be identified. Such instances shall be divided into clusters, whereby each cluster is comprised of any system of instances such that each instance is within one kilometer of at least one other instance in the cluster. Instances that are not within	No project activity instance shall exceed the applicable limit, which is 180 GWh_{th}/y. Since the project activity instances installed to date and proposed to be installed have/will have the same model, hence expected annual energy saving for each instance is less than 0.0142 GWh_{th}/y which is less than 0.01% of the threshold limit. As the annual energy saving is below 1% of the limit, therefore no project activity instance is identified and divided into clusters.	Since the project activity instances I have the same model and expected annual energy saving for each instance is less than 0.0151 GWh_{th}/y which is less than 0.01% of the threshold limit. As the annual energy saving is below 1% of the limit, therefore no project activity instance is identified and divided into clusters hence verified and accepted.

	one kilometer of any other instance shall not be assigned to clusters. None of the clusters shall exceed the capacity limit and no further project activity instances shall be added to the project that would cause any of the clusters to exceed the capacity limit.		

Sustainable development contributions

Sr. No.	SDG Target	SDG Indicator	Current Project contribution	VVB assessment
1.	1.1	1.1.1 Proportion of the population living below the international poverty line by sex, age, employment status and geographic location (urban/rural)	The project has increased the 415 individuals (employed for manufacturing, distribution and monitoring of the project activity) total income to INR 12,000 – 35,000 per month, bringing them above the international poverty line.	During the desk review/10/ and as a part of on-site interviews/9/, VVB discussed and confirmed that PP has provided employment to 415 individuals with include both male and female from urban as well as rural area. The interviews and desk review of submitted document confirm that their income which is above the international poverty line.
2.	3.9	3.9.1 Mortality rate attributed to household and ambient air pollution	44,648 households experiencing reduction in particulate matter emitted during cooking thereby improving overall health outcomes and reducing burdens of disease.	During the desk review/13/ and as a part of on-site interviews/9/, VVB discussed and confirmed that the end users which are using ICS expressed that they have observed reduction is smoke which mainly contains harmful gases leading to health deterioration[8]. Thus improving overall health impact and reduction in diseases.
3.	4.7	4.7.1 Extent to which (ii) education for sustainable development are mainstreamed in	44,648 households were appraised/ sensitized about the impact of use of traditional cookstoves on human health, environment and gender equality and how use of ICS could foster sustainable development	During the desk review/13/ and as a part of on-site interviews/9/, VVB discussed and confirmed that the end users were explained and have understood that the ICS provide them with sustainable solution due to reduction is use of firewood quantity and reduction is smoke and also saving in cooking time.
4.	5.4	5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location	44,648 households have experienced reduction in time spent on wood collection and food cooking.	During the desk review/13/ and as a part of on-site interviews/9/, VVB discussed and confirmed that the end users are experiencing savings in time spent on firewood collection and food cooking.
5.	7.1	7.1.2 Proportion of population with primary reliance on clean fuels and technology	Increase access to clean cooking technology with ICS installations in 44,648 households under the project activity	During the desk review/13/ and as a part of on-site interviews/9/, VVB discussed and confirmed that the end users 44,68 households are availing cleaner technology of ICS on daily basis.
6.	8.5	8.5.1 Average hourly earnings of employees, by sex, age, occupation and persons with disabilities	Project activity created a total of 415 new job positions in different roles for manufacturing and distribution of ICS and post-implementation monitoring activity.	During the desk review/10/ and as a part of on-site interviews/9/, VVB discussed and confirmed that PP has provided employment to 415 individuals with include both male and female from urban as well as rural area.

[8] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7014065/

7.	9.3	9.3.1 Proportion of small-scale industries in total industry value added.	MSME unit (GHG Reduction Technologies Pvt Ltd) has got the boost due to the project activity.	During the desk review/10/ and as a part of on-site interviews/9/, VVB discussed and confirmed that as a part of project activity, manufacturing of ICS has got a boost leading to employment in a small scale industry manufacturing ICS.
8.	13.2	13.2.2 Tonnes of greenhouse gas emissions avoided or removed	Contribute to greenhouse gas emission reduction of 68,477 tCO_2e	Based on submitted ER sheet /2/ and applied methodology/6/, VVB confirmed that the project has led to emission reductions over the baseline scenario.
9.	15.3	15.3.1 Proportion of land that is degraded over total land area	Contribute to the reduction of deforestation of 37,473 tonnes of fuel wood from forests surrounding the communities and reducing pressure on forest reserves	Based on submitted ER sheet /2/ and desk review of the documents/3//1/3, VVB has confirmed that reduction in firewood usage led to savings of fuel wood.

VVB confirms that the description in the VCS PD MR is accurate, complete, and provides an understanding of the nature of the project. During on-site visit, based on desk review and interviews with stakeholders confirms that the project has been implemented as described in the VCS PD MR. Based on submitted ER calculations which are in line with applied methodology, VVB confirms that the project is likely to achieve estimated GHG emission reduction and the actual emission reductions are varying since the estimated ER were based on certain assumptions which are provided in the section 3.4.8 below, confirmed by VVB and are subject to change.

CL 01 was raised and closed successfully. Kindly refer appendix 3 for more information.

3.2 Participation under Other GHG Programs

In order to receive carbon benefits during the project activity's crediting period, EKI Energy Services Limited has not registered for, nor is it pursuing registration under, any other GHG emission programme. This was confirmed by looking over the undertaking letter/4/ and by checking other GHG project registries like Clean Development Mechanism (CDM)/22/, Global Carbon Council (GCC)/23/, Gold Standard for Global Goals (GS4GG) /24/ etc. The current project activity is thermal energy generation using clean technology, hence, is applicable to register under CDM, GS, GCC and VCS registry. VVB has also checked the CDM, GS, GCC registry and found that the project is not claiming any other form of environmental form of credit during the current monitoring period. Also, PP has submitted declaration/4/ that the project is not registered under any other program. Thereafter accepted by the assessment team and thus, the project is eligible to participate under the VCS Program.

3.3 Safeguards

3.3.1 No Net Harm

The proposed project activity has not noted any potential detrimental effects on the environment or society. Because clean technology of cook stoves is installed and used. During the project activity 44,648 cookstoves are distributed which result in reduction of greenhouse gas emissions that result due to the project activity, which supports socio-economic and environmental well-being.

The assessment team has determined that this complies with the standards of the VCS Standard (version 4.4) /7(b)/ and is therefore acceptable.

3.3.2 Local Stakeholder Consultation

The Joint PD & MR/01/'s section 2.2 contains a detailed explanation of the local stakeholder consultation process conducted. Stakeholders were defined as individuals who are impacted by project activities and those whose actions directly or indirectly affect the project.

The stakeholder consultation meeting details are as follows:

The dates of the Stakeholder Meetings are as follows:

Date of invitation – 25-October-2022

Date of Meeting – 20-November-2022

Location of Meeting – Rehgun, Barwani district, Madhya Pradesh

Village representatives like village heads, sarpanch, distributors and their representatives along with the local household owners that are end users, all showed up to the meeting. The purpose of the meeting was to explore any concerns that the stakeholders may have had about the project's environmental and social implications. Throughout the stakeholders meeting, opinions and recommendations were welcomed.

The assessment team conducted stakeholder interviews on-site/9/. The validation team confirmed by the stakeholder's responses that the stakeholder consultation process had been carried out in accordance with the joint PD & MR/01/. The stakeholder acknowledged that they received an invitation to attend the meeting. The invitation procedure specified in the joint PD & MR/01/ was determined to be consistent with this claim. It was further confirmed that the meeting scheduled was for combine meeting for all the districts under the project and stakeholders from target villages were invited by PP. When the assessment team asked stakeholders about the grievance reporting mechanism, they confirmed that they had been informed during the stakeholder consultation process. A copy of the grievance registry/15/ confirms that there were no complaints reported during the current monitoring period a few questions were raised by the stakeholders which were satisfactorily addressed by the PP team. The details are listed below:

Question	Response by Project Proponent
We can wash it by Water?	No you cannot wash it with water, you can clean it by dry cloths

How wood will be used inside the cookstoves?	You need to break the wood logs into small pieces and try to use small pieces of wood in the cookstoves
Is cookstove distributed for free?	Yes, cookstoves is distributed for free.
Can we use kerosene or plastic?	No, Kerosene or plastic is to be avoided and not to be used.

PP has noted feedback received during the meeting in the VCS PD MR. VVB noted that stakeholder inputs have no effect on the project design and no changes were necessary to project design. VVB further confirms that inputs received were appropriately addressed by the PP.

CL 02 was raised and closed successfully. FAR 01 is raised for the subsequent verification. Kindly refer appendix 3 for more information.

3.3.3 Environmental Impact

The Government of India has published Environment Impact Assessment (EIA) notification in year 2006[9] which mandates the EIA for projects and activities as per category A or B. The current project activity i. e. distribution of ICS is not part of the list under both the categories. Thus, validation team confirms that EIA is not mandatory and hence is not applicable for the present project activity. No negative environmental impacts have been identified from the project. Project activity supports various positive environmental impacts such as -

- Improves the local environment by reducing the rate of degradation of forests and deforestation in the project area.
- Reduce indoor pollution – ICS emits less smoke and reduces morbidity from respiratory diseases and other health hazards.
- Reduce global and local environmental pollution and environmental degradation by a reduction in the use of non-renewable biomass thus leading to a reduction in GHG emissions.
- Less water and effort are needed for cleaning vessels as the cooking process is relatively smoke-free.

3.3.4 Public Comments

The project was open for public comments from 15-April-2022 to 15-May-2022. During the time for public comment, no comments were received.

3.3.5 AFOLU-Specific Safeguards

[9] https://environmentclearance.nic.in/writereaddata/EIA_notifications/2006_09_14_EIA.pdf

This project is not an AFOLU project. This section is not required for non-AFOLU project.

3.4 Application of Methodology

3.4.1 Title and Reference

Title: Energy efficiency measures in thermal applications of non-renewable biomass
Type: Type II – Energy Efficiency Improved Projects

VCS Methodology: VMR0006: Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.1

Sectoral scope 3

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

This methodology also refers to the latest version of AMS II.G version 11.1 - Energy efficiency measures in thermal applications of non-renewable biomass[10]

https://cdm.unfccc.int/methodologies/DB/GNFWB3Y6GM4WPXFRR2SXKS9XR908IO

For the calculation of the fraction of non-renewable biomass, the below tool is used "TOOL30 version 4.0: Calculation of the fraction of non-renewable biomass"

https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-30-v4.0.pdf

CL 03 was raised and closed successfully. Kindly refer appendix 3 for more information.

3.4.2 Applicability

The project activity uses VMR0006, Version 1.1/6/, of the VCS methodology[11].

The assessment team evaluated the applicability criteria for the baseline methodology through document review and interview. The project activity's compliance with the methodology's requirements is attested to by the assessment team.

[10] VMR0006 refers to Energy efficiency measures in thermal applications of non-renewable biomass; version 11.1
[11]https://verra.org/wp-content/uploads/2021/07/VMR0006-Methodology-for-Installation-of-High-Efficiency-Firewood-Cookstoves-v1.1.pdf

S. N.	VMR0006, Version 1.1 Requirements	Project activity applicability	Means of verification
1.	Project activities shall be implemented in domestic premises or in community-based kitchen	The proposed project involves deployment of ICS only in households.	This was verified by the monitoring survey conducted by an independent third party during the annual ICS users' survey/13/
2.	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 (fuel wood) and can be single pot or multi-pot;	Energy Efficient stoves planned to be installed under this project are single-pot portable cook stoves that have an efficiency of more than 25%. For all project activity instances, ICS with an efficiency of 36.42% is planned to be installed. For future project activity instances, the manufacturer may change, and the cook stove efficiency that should be more than 25% as mentioned in the methodology based on manufacturer specification.	This was verified by the stove test certificate issued by credited laboratory (IIT Delhi) and submitted to the VVB for validation/5/
3.	Both 'Projects' and 'Large Projects' can use the methodology	Estimated average annual emission reductions for the grouped project activity are less than 300,000 tonnes of CO_2e per year. Therefore, the proposed project qualifies for the "Projects" criteria.	Same is verified by the assessment team from the emission reduction sheet/2/ and Joint PD and MR/1/ which is found correct Hence accepted.

S. N.	VMR0006, Version 1.1 Requirements	Project activity applicability	Means of verification
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;	The non-renewable biomass has been used in the country since 31st Dec 1989. The information was derived from the literature survey[12]	This was verified using literature references[13] presented by PP in Joint PD and MR and was cross checked through other literature reference[14] by VVB.
5.	For the specific case of biomass residues processed as a fuel (e.g. briquettes, wood chips) (a) It is produced using exclusively renewable biomass (more than one type of biomass may be used). (b) The consumption of the fuel should be monitored during the crediting period and (c) Energy use for renewable biomass processing (e.g. shredding and 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.	Not applicable. The ICS is introduced as energy efficiency measure to replace baseline stoves and reduce the use of non-renewable biomass for combustion.	Not applicable.

[12] http://data.un.org/Data.aspx?d=EDATA&f=cmID%3aFW
[13] http://data.un.org/Data.aspx?d=EDATA&f=cmID%3aFW
[14] https://fsi.nic.in/documents/sfr_1987_hindi.pdf

S. N.	VMR0006, Version 1.1 Requirements	Project activity applicability	Means of verification
6.	Monitoring approaches for $B_{savings,i,j}$ and values for parameters f_{NRB} (when Option (a) in paragraph 48(c) is chosen) and the quantity of woody biomass (fuel wood) $B_{old,i,j}$ may be determined	Not applicable. The ICS is introduced as energy efficiency measure to replace baseline stoves and reduce the use of non-renewable biomass for combustion.	Not applicable.

S. N.	AMS II G Version 11.1 Requirements	Project activity applicability	Means of verification
1	The VCS PD shall explain the proposed method for distribution of project devices including the method to avoid double counting of emission reductions such as unique identifications of product and end-user locations (e. g. programme logo).	Each ICS in this project can be identified by a unique combination of customer name and geographical location, as well as a serial number. The serial number is a unique number which allows for a clear distinction between the stoves. No individual serial number can be repeated within the project, thus ensuring that each stove is counted only once in the proposed project. In addition, the project has been cross-checked against other CDM project activity operating in the country using the UNFCCC, the Gold Standard, and other relevant voluntary carbon schemes to ensure that the ICS is not included in any other CDM project activity or voluntary project activity	PP has submitted end user contracts/3/, project ICS distribution database/3/. These documents confirm the information i. e. Sr. ID of ICS, customer name, the unique number mentioned on the agreement thus confirming unique identification of the distributed project device. Further, VVB has cross checked GHG registries and no project was found within the same location except for VCS 2942 which is undergoing assessment with the same VVB. VVB has checked and confirmed that ICS distributed / to be distributed under both the projects have distinctly different unique identification numbers.

S. N.	AMS II G Version 11.1 Requirements	Project activity applicability	Means of verification
2	The CDM-PDD or CDM-PoA-DD/CPA-DD 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.	Manufacturers/ cook stove distributors undertaking/4/ is provided that EKI is the owner of that carbon credits and Manufacturers/ cook stove distributors will not claim any credits for such cook stoves	This information verified from declaration for the carbon waiver/3/.

Applicability of Tool 30 :

Applicability criterion	How the project complies
This tool may be used by: (a) DNAs to submit region- or country-specific default fNRB values, following the procedures for development, revision, clarification and update of standardized baselines (SB procedures); or (b) project participants to calculate project- or PoA-specific f_{NRB} values	The project participant has used this Tool to calculate project-specific f_{NRB} values.

CAR 02 was raised and closed successfully. Kindly refer appendix 3 for more information.

3.4.3 Project Boundary

The project boundary is specified as "the physical, geographical site of the efficient devices that utilise biomass" in accordance with the applicable methodology VMR0006 version 1.1 and CDM methodology AMS II G, version 11.1[15].

[15] The latest version of methodology is not referred here as the applied methodology – VERRA methodology – VMR0006 refers to AMS II.G, version 11.1

The Joint PD & MR /01/ accurately stated the information pertaining to the project boundary. PP has distributed cook stoves within India. As a result, the project boundary for the proposed VCS project activity has taken into account the entirety of India.

The assessment team certifies that there are no sources of gases inside the project boundary for the project instances, which is based on the applied methodology/6/.

For the purpose of calculating project and baseline emissions for the project, the physical delineation of the project boundary and the description of the emission sources and GHGs that are included in the boundary are appropriate.

CAR 01 was raised and closed successfully. Kindly refer appendix 3 for more information.

3.4.4 Baseline Scenario

The project activity will install new, improved cookstove systems in the households which were using traditional cookstoves with firewood as a fuel for thermal energy requirements.. During the on-site visit/9/, this was verified. The default scenario calls for increased use of firewood for household thermal energy requirements viz., for cooking purposes. As a result, it adheres to the requirements of the methodology.

The utilisation of non-renewable biomass serves as the actual baseline. According to Methodology VMR0006, Version 1.1, "The baseline scenario is the continuous use of non-renewable wood fuel by the target community to meet identical thermal energy needs as provided by project cookstoves in the absence of project activity" (firewood).

The initiative's targeted beneficiaries would continue using outdated, inefficient cooking stoves that used a lot of non-renewable biomasses if project activities weren't carried out.

As a result, the baseline scenario has been determined in accordance with the demands of the used methodology VMR0006, Version 1.1/6/, and it is accepted to be reasonable and justifiable.

Accordingly, the baseline for this project is the ongoing use of non-renewable wood fuel in traditional cookstoves or three-stone fire stove within a specific region.

3.4.5 Additionality

The project's additionality is shown by how well it adheres to the standards established in VMR0006, Version 1.1/6/.

Activity Approach

Step 01: Regulatory excess

The distribution of residential fuel-efficient cookstoves is not mandated by any government programme or policy in the country where this project is being implemented. The project is not required by any legislation, statute, regulatory framework, or for UNFCCC non-Annex I nations, any law, statute, or other regulatory structure that is consistently applied.

Only voluntary participation is allowed from households in this study. EKI Energy Services Limited declaration of the voluntary participation of the planned project was verified and found to be appropriate/19/.

Step 02: Positive List

The positive list is represented by the application requirements of this methodology. The project satisfies each of the requirements for applicability listed in Section 3.2. The project also follows the conditions stated below:

1. The project distributes or installs stoves at no cost to the end user and derives all of its funding from the sale of GHG credits.

2. Neither the initiative nor its activities are funded by multilateral agencies or government programmes. Therefore, the project is additional and voluntary.

Verification team checked the end user agreements/3/ and also confirmed form the end users during the on-site audit that the ICS were distributed at free of cost. Team also checked the national and the sated governments schemes portal to verify that the project is not implemented as a part of any government scheme. Based on the aforementioned data, the Validation Team draws the conclusion that the data in the joint PD and MR complies with methodology requirements.

CAR 04 were raised and closed successfully. Kindly refer appendix 3 for more information.

3.4.6 Quantification of GHG Emission Reductions and Removals

In the Joint PD & MR /1/, the equations and choices specified in the applied methodology VMR0006, Version 1.1/6/, are accurately cited. The formulas listed in the applied methodology (06) are used to calculate the project's emission reductions.

The validation team certifies that the formulas are accurately stated for the determination of emissions reductions based on their review of the Joint PD & MR /1/. The facts and requirements supplied in the applied methodology/06/ have been compared with the parameters and equations presented in the Joint PD & MR /01/ and other pertinent papers. In order to establish compatibility between all the formulas contained in the Joint PD & MR/01/ and ER validation spreadsheet /02/ and the applied methodology /06/, an equation comparison has also been done.

PP has applied a value of ηol which is 0.1 for this project based on the usage of old traditional cookstoves in the baseline scenario as observed in similar projects by the same PP. This value corresponds with the guidelines stated in VMR0006 Version 1.1, which stipulates that a default value of 0.1 should be used for baseline devices that are either three-stone fires utilizing firewood (not charcoal), or conventional devices lacking an improved combustion air supply or flue gas ventilation and without a grate or chimney. Same has been assessed and found correct and conservative by the assessment team.

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.

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

Where:

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

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

ER_y = Emission reductions during year *y* in tCO_2e

$ER_{y,i,j,}$ = Emission reductions by improved cookstove of type *i and* batch *j* during year *y* in tCO_2e

$$\boldsymbol{ER_{y,i,j}} = B_{y,savings,i,j} * NCV_{woodfuel} * f_{NRB,y} * \left(EF_{wf,CO2} + EF_{wf,nonCO2}\right) * N_{y,i,j,} * 0.95$$ Equation (2)

Where

$\boldsymbol{B_{y,savings,i,j}}$	=	Quantity of woody biomass (fuel wood) that is saved in tonnes per improved cookstove of type i and batch j during year y
$\boldsymbol{f_{NRB,y}}$	=	Fraction of woody biomass (fuel wood) that can be established as non-renewable biomass (f_{NRB})
$\boldsymbol{NCV}_{\text{wood fuel}}$	=	Net calorific value of the non-renewable woody biomass (fuel wood) that is substituted or reduced(IPCC default for wood fuel, 0.0156 TJ/tonne, based on the gross weight of the wood that is 'air-dried')
$\boldsymbol{EF}_{\text{wf,CO2}}$	=	CO_2 emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 112 tCO_2/TJ)
$\boldsymbol{EF}_{\text{wf,non CO2}}$	=	Non-CO_2 emission factor for the use of wood fuel in baseline scenario (IPCC default for wood fuel, 26.23 tCO_2/TJ)
$N_{y,I,j}$	=	Number of improved cookstoves of type i and batch j operating during year y
0.95	=	Discount factor to account for leakage

Determination of $B_{y,savings,I,j}$

The quantify of woody biomass (fuel wood) saved due to implementation of improved cookstoves to be estimated using equation below:

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

Where

η_{old} = Efficiency of baseline cookstove

$\eta_{new,y,i,j}$ = 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 4.

$B_{y=1,new,i,j,survey}$ = Annual quantity of woody biomass (fuel wood) used by improved cookstoves in tonnes per device of type *i* and batch *j*, determined in the first year of the implementation of the project through a sample survey.

$$\eta_{new,y,i,j} = \eta_p \times (DF_n)^{y-1} \times 0.94 \quad \text{Equation (4)}$$

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

1) Installed 44,648 cook stoves.
2) The life span of each ICS is 7 years; thus, the operational lifetime of each project activity instance is taken as 7 years.
3) Annual stove loss rate is estimated at 5%. This is assumed for estimation. During actual ER calculation, this value may change. This value is determined during actual verification based on survey results.
4) $B_{y=1,\ new,i,\ survey}$, is assumed as 3.93 kg/device/day or 1.43 tonnes/device/year which has been determined during the first monitoring period, based on survey results.

Determination of F_{nrb} value:

The fraction of woody biomass (fuel wood) that can be established as non-renewable is given by:

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

Where:

f_{NRB} = Fraction of non-renewable biomass in the applicable area in the relevant period (fraction or %)

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 (tonnes)

Commercial use of woody biomass (fuel wood) for non-energy purposes (such as building or furniture) that is derived from forests or other land areas in the relevant area (tonnes)

NRB = H – RB

Where:

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

The following equation accounts for all consumption within the relevant area to determine the overall consumption of woody biomass (fuel wood) (H).

H = HW × N + CE + NE

Where:

HW	=	Average consumption of wood fuel per household, including fuelwood and charcoal, in the applicable area in the relevant period (tonnes//household)
N	=	Number of households consuming wood fuel within the applicable area in the relevant period (number)
CE	=	Commercial woody biomass (fuel wood) consumption for energy applications (e.g. commercial, industrial or institutional uses of woody biomass (fuel wood) 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 (fuel wood) 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)

As the parameters HW and N, disaggregated value is not provided, hence PP has used an aggregated value of (H × N) in the calculations.

	HW × N (million tonnes)	CE (Million tonnes)	**H (Million tonnes)**
Madhya Pradesh	13.67	1.494	**15.1593**

PP has considered the values for the above parameters from Government of India report.

Procedure to estimate the quantity of renewable biomass available (RB):

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

Where:

$MAI_{forest,i}$ = Mean Annual Increment of woody biomass (fuel wood) 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 (fuel wood) 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 (h

$P_{other,i}$ = 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)

$MAI_{forest,i}$ = 0.5 m^3/hectare/year[16]

PP has used same value for $MAI_{other,i}$ as no country specific data is available. VVB further checked other registered project from VERRA and noted that same value has been considered and hence found appropriate.

Registry	Registry ID	Weblink	MAI values considered (m^3/hectare/year)
VCS	2983	https://registry.verra.org/app/projectDet	$MAI_{forest,i}$ – 0.5

16 https://www.forests.tn.gov.in/app/webroot/img/Yield%20table%20for%20few%20tree%20species%20grown%20in%20farm%20settings.pdf (since the link is no more active, a PDF file is submitted to VVB and same was also submitted to VERRA). The value is calculated using average density of major species for the said forest area. For further information, fNRB sheet – worksheet Renewable biomass was checked and confirmed.

		ail/VCS/2983	$MAI_{other,i}$ – not considered
VCS	3151	https://registry.verra.org/app/projectDetail/VCS/3151	$MAI_{forest,i}$ – 0.5 $MAI_{other,i}$ – not considered

Average Density of Major species – Forest = 0.654 t/m^3 (this is calculated value and calculations presented in the excel file – 'wood density' were checked and confirmed).

Average Density of Major species - Tree outside Forest (Rural + Urban) = 0.644 t/m^3 (this is calculated value and calculations presented in the excel file – 'wood density' were checked and confirmed).

VVB noted that the wood density values used by PP (0.645 T/m^3 for forests and 0.644 T/m^3 for trees outside forests) are conservative compared to those used in the above project.

Hence, the values used for the calculations are;

$MAI_{forest,i}$ = 0.33 tonnes/hectare/year

$MAI_{other,i}$ = 0.32 tonnes/hectare/year

$MAI_{forest,i}$ (tonnes/hectare/year)	$MAI_{other,i}$ (tonnes/hectare/year)	$F_{forest,i}$ (Million Ha)	$P_{forest,i}$(Million Ha)	$F_{other,i}$(Million Ha)	**RB (million tonne)**
0.33	0.32	6.4772	3.579[17]	0.21	**1.62**

VVB has checked and confirmed that the data source used for MAI value is nationally available data thus satisfying the requirements of tool 30 as it is as per option (d) of data/parameter table 5 of tool 30, version 4.0. The document reports data after the year 2015 which satisfies the requirement of the tool i .e. the data vintage shall not be before the year 2000 as mentioned in the table 5. As per QA/QC procedures of the table 5, *If national studies or government data or official statistics are used, compare values with FAO and IPCC defaults and provide justification of differences*. VVB noted that FAO database table 14[18] provides percentage distribution of forest types by country and no specific value is provided thus it is not comparable. Moreover, same was also observed in case of IPCC report because, the MAI values listed for above-ground biomass growth rates in the 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories[19] (Above-ground biomass growth rates for different ecological

[17] As demonstrated in the fNRB workbook , sheet – Renewable biomass; calculation of $P_{forest,i}$ value is demonstrated through both the ways - Option 1: Considering non-Accessible Area (VDF and MDF) for both Reserved Forest and Protected Forest and Option 2: Considering Reserved Forest (VDF, MDF, and OF) as total inaccessible and has treated Protected Forest as totally accessible (i.e. zero value). The lower of the value calculated i. e. 3.579 million has. is chosen which is found appropriate.

[18] FAO Global Forest Resources Assessment 2000 by the FAO for "Distribution of total forest area by ecological zone" (Table 14)

[19] https://www.ipcc-nggip.iges.or.jp/public/2019rf/pdf/4_Volume4/19R_V4_Ch04_Forest%20Land.pdf

zones) pertain to the Asia region as a whole, rather than specific to India. Hence, a direct comparison with the source document used is found inappropriate by the VVB.

The fraction of woody biomass (fuel wood) that can be established as non-renewable for all locations:

H	RB	NRB	F_{nrb}
15.16	1.62	13.54	**89.34%**

An assessment of few parameters is presented below which is checked and confirmed based on submitted excel sheet and publicly available data:

Wood Consumption

The wood consumption is estimated as sum of fuel wood consumption and consumption of commercial wood.

Parameter	Value	VVB Assessment
Fuel Wood Consumption	13.67 million tonne	VVB confirmed that the state of forest survey report from year 2011 for the state of Madhya Pradesh is the most recent data available for value of fuelwood usage. VVB acknowledge that the referred data is in accordance with paragraph 10 of tool 30. Since the value of fuel wood consumption in year 2022 would be different from the report in year 2011 which is appropriate and hence accepted. In view of the same, the value of fuel wood as per estimated value from MoEFF&CC for fuel wood is found more appropriate. The values and calculation presented in the excel sheet was checked and found appropriate. The value of fuel wood consumption as 13.67 million tonne as per https://fsi.nic.in/cover_2011/chapter7.pdf is found appropriate by the assessment team.
Commercial Wood Consumption	1.494 million tonne	The value of commercial wood consumption is taken as per the most recent available public data by PP as 1.149 million tonne. Since the state of forest survey, 2011 is the most recent data available for the state of Madhya Pradesh to consider the value of the parameter and same is being used by PP for estimation of the parameter value , same is found appropriate.
Consumption of Bamboo and small timber	15.1593 million tonne	The value of the parameter is the estimated based on the most recent available data by PP i. e. state of forest report 2019. This is appropriate as per the tool requirement and

		hence acceptable.

Renewable Biomass-

Parameter	Value	VVB assessment
Mean Annual Increment	0.5 m^3/ha/year	PP has considered the mean annual increment of India Forest as published by Government of Tamil Nadu which also outlines the average value for India forest and hence accepted. Since the value considered is the publicly available national statistics, same is acceptable to VVB.
Area under Forest	6,477,200 ha	The value is obtained by PP based on the most recent State of Forest Report 2021 (chapter 13) published by Forest Survey of India, MoEFCC, Govt of India. Since the most recent data is used for the value of the parameter, same is found acceptable.
Area under open forest	2,832,600 ha	PP has used the value related to area under non-forest land from latest State of Forest Report 2021 (chapter 13) published by Forest Survey of India, MoEFCC, Govt of India. Since the most recent date is used for the value of the parameter, same is found acceptable.

VVB noted that based on the above values, PP has calculated fNRB value in the excel sheet in line with tool 30 and same is checked and found acceptable. The calculated value of fNRB is 89.34% for the state of Madhya Pradesh (geographical location of the project activity). Since no published data is available to compare the calculated value, PP has compared this value with 2 nos. registered project and it was noted that the value considered for the current project is the most conservative and hence accepted by the VVB.

The registered project from the same geographical area and fNRB value for the same:

Project Reference	Geographic Area	f_{NRB} Value
Project ID- 2473 Project Title - Installation of High Efficient Cook Stoves by Enking International	Madhya Pradesh	Madhya Pradesh - 0.9310
Project ID- 2533 Project Title-Improved Cookstove Programme by SDG13 in India	Madhya Pradesh	Madhya Pradesh - 0.9010
Project ID – 2754 Project title - Household Biogas Carbon Offset Project for Clean, Convenient and Efficient Cooking by INSEDA Engineers and Consultants Private Limited (INSEDA-Engg)	Madhya Pradesh	Madhya Pradesh - 0.9287
Project ID – 2942 Clean Cooking - Cook Stove for Rural India	Madhya Pradesh	Madhya Pradesh – 0.8920
Project ID – 2944 Clean Cookstoves for Rural India	Madhya Pradesh	Madhya Pradesh – 0.8920

VVB noted that the registered projects 2942 and 2944 used fNRB value as 0.8920 which is found to be more conservative than the calculated value for the current project i. e. 0.8934 and hence same is being used by PP now. VVB noted that this value is already used in the registered projects and is more conservative hence found appropriate.

$\eta_{new,y,i,j} = \eta p * (DFn)^{(y-1)} * 0.94$ ----------(4)

Where

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

For ex-ante calculation purpose, the below assumptions were applied:

1) Installed 44,648 cookstoves
2) The life span of each ICS is 7 years; thus, the operational lifetime of each project activity instance is taken as 7 years.
3) Annual stove loss rate is estimated at 5%. This is assumed for estimation. During actual ER calculation, this value may change. This value are determined during actual verification based on survey results.
4) $B_{y=1,\ new,i,\ survey}$, is assumed as 3.93 kg/device/day or equal to 1.43 tonnes/device/year.

This value has been determined during the first monitoring period, based on survey results.

Determination of efficiency of ICS during year y

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

Where

η_p = 36.42%

DF_n = 0.99

Example of calculation:

If y= 1

$\eta_{new,y,i,j}$ = 36.42% X $(0.99)1^{1-1}$ X 0.94

34.23%

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

Year (y)	$\eta_{new,y,i,j}$
1	34.23%
2	33.89%
3	33.55%
4	33.22%
5	32.89%
6	32.56%
7	32.23%

Determination of the quantity of woody biomass (fuel wood) that is saved in tonnes per ICS during year y

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

If y= 1,

$B_{y,savings,i,j}$= 1.43 X [(0.3423/0.1) -1]

= 3.48 tonnes

Year (y)	$B_{y=1,new,i,survey}$	$\eta_{new,y,i,j}$	η_{old}	$B_{y,savings,i,j}$
1	1.43	34.23%	0.1	3.48
2	1.43	33.89%	0.1	3.43
3	1.43	33.55%	0.1	3.38
4	1.43	33.22%	0.1	3.33
5	1.43	32.89%	0.1	3.28
6	1.43	32.56%	0.1	3.24
7	1.43	32.23%	0.1	3.19

Determination of emission reductions by ICS of year1 during year y

$$ER_{y,i,j} = B_{y,savings,i,j} \times NCV_{wood\ fuel} \times f_{NRB,y} \times \left(EF_{wf,CO2} + EF_{wf,non\ CO2}\right) \times N_{y,i,j} \times 0.95$$

Where

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

$f_{NRB,y}$ = 0.8731

$EF_{wf,CO2} + EF_{wf,non\ CO2}$ = 112 + 26.23 = 138.23 tCO_2/TJ

Example of calculation $N_{y,i,j}$= 44,648:

If y=1,

$ER_{y,i,j}$ = 3.48 X 0.0156 X 0.8920 x 138.23 X 44,648 X 0.95

= 283,623 tCO_2e (round down value)

Year	$B_{y,savings,i,j}$	$NCV_{wood\ fuel}$	$f_{NRB,y}$	$EF_{wf,CO2} + EF_{wf,non\ CO2}$	$N_{y,i,j}$	$ER_{y,i,j}$
1	3.48	0.0156	0.8920	138.23	44,648	283,623
2	3.43	0.0156	0.8920	138.23	44,648	265,632
3	3.38	0.0156	0.8920	138.23	44,648	248,084
4	3.33	0.0156	0.8920	138.23	44,648	230,960
5	3.28	0.0156	0.8920	138.23	44,648	214,266
6	3.24	0.0156	0.8920	138.23	44,648	197,990
7	3.19	0.0156	0.8920	138.23	44,648	182,120

Year	Estimated baseline emissions or removals (tCO_2e)	Estimated project emissions or removals (tCO_2e)	Estimated leakage emissions (tCO_2e)	Estimated net GHG emission reductions or removals (tCO_2e)
5-December-2022 to 31-December-2022	20,980	0	0	20,980
01-January-2023 to 31-December-2023	282,292	0	0	282,292
01-January-2024 to 31-December-2024	264,334	0	0	264,334
01-January-2025 to 31-December-2025	246,818	0	0	246,818
01-January-2026 to 31-December-2026	229,725	0	0	229,725
01-January-2027 to 31-December-2027	213,062	0	0	213,062
01-January-2028 to 31-December-2028	196,816	0	0	196,816
01-January-2029 to 04-December-2029	168,648	0	0	168,648
Total	**1,622,675**	**0**	**0**	**1,622,675**
		Total number of crediting years		**7**
		Average annual Emission Reductions (tCO_2e)		**231,810**

The assessment team certifies that the relevant tools and the applied methodology were used correctly to determine baseline emissions and net GHG emission reductions during the project crediting period.

CL 04 and CAR 03 were raised and closed successfully. Kindly refer appendix 3 for more information.

3.4.7 Methodology Deviations

Not Applicable.

3.4.8 Monitoring Plan

The project uses VCS methodology, specifically VMR0006, Version 1.1, and in accordance with that approach, the following parameters will be monitored ex-post:

Parameters fixed ex-ante:

$f_{NRB,y}$	Fraction	Fraction of woody biomass that can be established as non-renewable biomass	PP has estimated the value in accordance to methods stipulated under Tool 30: Calculation of the fraction of non-renewable Biomass Version 04.0/14/ as 0.8920 which is already demonstrated in the above section and accepted.
NCV $_{wood\ fuel}$	TJ/tonne	The net calorific value of the non-renewable woody biomass that is substituted or reduced	The value 0.0156 TJ/tonne is considered based on 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy/19/, Chapter 1 Introduction as asked by the applied methodology and hence accepted.
$EF_{wf,CO2}$	tCO_2/TJ	CO_2 emission factor for the use of wood fuel in the baseline scenario	The value 112 tCO_2/TJ is based on 2006 IPCC Guidelines for National Greenhouse Gas Inventories/19/; Volume 2 Energy, Chapter 2 Stationary Combustion as asked by the applied methodology/6/ and hence accepted.
$EF_{wf,non\ CO2}$	tCO_2/TJ	Non CO_2 emission factor for the use of wood fuel in the baseline scenario	The value 26.23 tCO_2/TJ is based on 2006 IPCC Guidelines for National Greenhouse Gas Inventories/19/; Volume 2 Energy, Chapter 2 Stationary Combustion as asked by the applied methodology and hence accepted.

$\eta_{old,i,j}$	Fraction	The efficiency of baseline cookstove	Since the baseline fuel is established as a firewood and cook stove as three stone fired, a default value of 0.1 as per the applied methodology – VMR0006, version 1.1/6/ is considered which is found appropriate.
η_p	%	The efficiency of the project stove at the start of the project activity.	The ICS was tested at Indian Institute of Technology, Delhi as per BIS protocol and the tested efficiency is assed to be 36.42% as confirmed based on the submitted test report/5/.
DF_n	Fraction	Discount factor to account for efficiency loss of project cookstove per year of operation	PP has used methodological default factor as 0.99 which is found appropriate and accepted.
Life Span	Years	Operating lifetime of project device for projects opting Equation 5 for determining project stove efficiency	PP has submitted manufacturer's specification/8/ which confirms the operating years of the cookstoves to be installed are 7 years and hence accepted.
$\eta_{new,y,i,j}$	Fraction	The efficiency of the improved cook stove type i and batch j determined as per equation 5 of methodology during year y	Based on the efficiency test report from a IIT Delhi laboratory/5/ for 1st year than calculated using equation 5 of methodology, PP has fixed the values for 1st crediting period as below:

Year (y)	$\eta_{new,y,i,j}$
1	34.23%
2	33.89%
3	33.55%
4	33.22%
5	32.89%
6	32.56%
7	32.23%

			If, PP uses/adds new type of cookstove, the efficiency for the same would also be established ex-ante.

Parameters to be monitored are:

Parameter (s)	Units	Description	Source of monitoring data
$N_{y,i.j}$	Number	Number of project devices of type i and age a that are operating in year y	Measured directly or based on a representative sample. As per methodology, the minimum sample size will be determined in which case compliance with 90/10 confidence precision is not obligatory
$B_{y=1,new,I,j,survey}$	Fraction	Annual quantity of woody biomass (fuel wood) 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	PP has determined this value in the first year of implementation through a sample survey/13/. The sample survey report submitted to VVB was checked and it was confirmed that sample size was selected in line with the guidelines provided in methodology Section 8.4 option (b). PP has used weighing scale for measurement of woody biomass and VVB confirmed that the weighing scale was pre-calibrated as it was newly purchased/20/ and used for the survey.

The annual ICS survey shall be the source of the annual values of the monitoring parameter, as indicated in the Joint PD & MR. The annual survey data on functioning devices will be the foundation for the calculations of emission reductions. The evaluation team will examine it to confirm the results of the emission decrease.

The evaluation team affirms that thorough monitoring procedures, monitoring structure, management team, monitoring items, and monitoring functions have been amply proven based on the review of the Joint PD & MR/01/

PP will archive all data electronically for the duration of the crediting period and 2 years post the last verification/issuance.

CAR 05 were raised and closed successfully. Kindly refer appendix 3 for more information.

3.5 Non-Permanence Risk Analysis

Since the present project activity is a non-AFLOU project, this section is not applicable as per the guidance of Verra.

4 VERIFICATION FINDINGS

4.1 Accuracy of GHG Emission Reduction and Removal Calculations

The following list includes the information and factors used to determine the removal and reduction of GHG emissions:

Ex-ante parameters (parameters having default values):

Sl No	Parameter	Description	Value	Unit	Source
1.	$f_{NRB,y}$	Fraction of woody biomass (fuel wood) saved by the project activity during year y that can be established as non-renewable biomass	89.20	%	Fraction of non-renewable biomass is calculated as per the fNRB calculation TOOL30: Calculation of the fraction of non-renewable biomass/14/ in "fNRB" sheet/2/. Further sources used to calculate fNRB in ER sheet have been verified from weblinks provided in the sheet and the evidences submitted. PP has referred State of Forest report (Forest Survey of India Ministry of Environment, Forest & Climate Change, GoI, 2019). Assessment team found that the report is publicly available and the reference have been checked and found correct. Hence accepted.
2.	$NCV_{wood\ fuel}$	Net calorific value of the non-renewable woody biomass (fuel wood) that is substituted or reduced	0.0156	TJ/tonne	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 1 Introduction

3.	$EF_{wf,CO2}$	CO_2 emission factor for the use of wood fuel in baseline scenario	112	tCO_2/TJ	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion
4.	$EF_{wf,non\ CO2}$	Non-CO_2 emission factor for the use of wood fuel in baseline scenario	26.23	tCO_2/TJ	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion
5.	$\eta_{old,i,j}$	The efficiency of baseline cookstove	0.1	Fraction	Methodology default value
6.	η_p	The efficiency of the project stove at the start of project activity	36.42	Percentage	Manufacturer's specification, third party verified
7.	DF_n	Discount factor to account for efficiency loss of project cookstove per year of operation (fraction).	0.99	Fraction	Methodology default value
8.	Leakage factor	Discount factor to account for leakage	0.95	Fraction	In-line with the applied methodology VMR0006, ver. 1.1 Section 8.3.
9.	Life Span	Operating lifetime of project device for projects opting Equation 5 for determining project stove efficiency	7	Years	Manufacturer's specification[8] which is verified submitted by the PP and found correct.

As a part of monitoring plan, the assessment team found, checked and confirmed that following sustainable development goals are considered which are appropriate and are measurable.

Sr. No.	SDG Target	SDG Indicator	Current Project contribution	VVB assessment
10	1.1	1.1.1 Proportion of the population living below the international poverty line by sex, age, employment status and geographic location (urban/rural)	The project has increased the 415 individuals (employed for manufacturing, distribution and monitoring of the project activity) total income to INR 12,000 – 35,000 per month, bringing them above the international poverty line.	During the desk review/10/ and as a part of on-site interviews/9/, VVB discussed and confirmed that PP has provided employment to 415 individuals with include both male and female from urban as well as rural area. The interviews and desk review of submitted document confirm that their income which is above the international poverty line.
11	3.9	3.9.1 Mortality rate attributed to household and ambient air pollution	44,648 households experiencing reduction in particulate matter emitted during cooking thereby improving overall health outcomes and reducing burdens of disease.	During the desk review/13/ and as a part of on-site interviews/9/, VVB discussed and confirmed that the end users which are using ICS expressed that they have observed reduction is smoke which mainly contains harmful gases leading to health deterioration[20]. Thus improving overall health impact and reduction in diseases.
12	4.7	4.7.1 Extent to which (ii) education for sustainable development are mainstreamed in	44,648 households were appraised/ sensitized about the impact of use of traditional cookstoves on human health, environment and gender equality and how use of ICS could foster sustainable development	During the desk review/13/ and as a part of on-site interviews/9/, VVB discussed and confirmed that the end users were explained and have understood that the ICS provide them with sustainable solution due to reduction is use of firewood quantity and reduction is smoke and also saving in cooking time.
13	5.4	5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location	44,648 households have experienced reduction in time spent on wood collection and food cooking.	During the desk review/13/ and as a part of on-site interviews/9/, VVB discussed and confirmed that the end users are experiencing savings in time spent on firewood collection and food cooking.

[20] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7014065/

14	7.1	7.1.2 Proportion of population with primary reliance on clean fuels and technology	Increase access to clean cooking technology with ICS installations in 44,648 households under the project activity	During the desk review/13/ and as a part of on-site interviews/9/, VVB discussed and confirmed that the end users 44,68 households are availing cleaner technology of ICS on daily basis.
15	8.5	8.5.1 Average hourly earnings of employees, by sex, age, occupation and persons with disabilities	Project activity created a total of 415 new job positions in different roles for manufacturing and distribution of ICS and post-implementation monitoring activity.	During the desk review/10/ and as a part of on-site interviews/9/, VVB discussed and confirmed that PP has provided employment to 415 individuals with include both male and female from urban as well as rural area.
16	9.3	9.3.1 Proportion of small-scale industries in total industry value added.	MSME unit (GHG Reduction Technologies Pvt Ltd) has got the boost due to the project activity.	During the desk review/10/ and as a part of on-site interviews/9/, VVB discussed and confirmed that as a part of project activity, manufacturing of ICS has got a boost leading to employment in a small scale industry manufacturing ICS.
17	13.0	13.2.2 Tonnes of greenhouse gas emissions avoided or removed	Contribute to greenhouse gas emission reduction of 68,477 tCO_2e	Based on submitted ER sheet /2/ and applied methodology/6/, VVB confirmed that the project has led to emission reductions over the baseline scenario.
18	15.2	15.3.1 Proportion of land that is degraded over total land area	Contribute to the reduction of deforestation of 37,473 tonnes of fuel wood from forests surrounding the communities and reducing pressure on forest reserves	Based on submitted ER sheet /2/ and desk review of the documents/3//1/3, VVB has confirmed that reduction in firewood usage led to savings of fuel wood.

Parameter(s) monitored ex-post

Parameter	$N_{y,i,j}$ (Number of project devices of type i and batch j are operating in year *y*)
Means of verification	

Criteria/Requirements	Assessment/Observation
Measuring /Reading /Recording frequency	At least once every two years. For current monitoring period it is measured through survey/13/ which is checked and confirmed.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the Joint PD & MR and monitoring methodology. This parameter is monitored once every two through ICS survey.
Monitoring equipment	Sample survey
Value applied	44,648 The value is checked and confirmed based on sample survey submitted/13/.
How were the values in the monitoring report verified?	The value of ICS distributed is measured by PP using a representative sample. VVB noted that section 8.4 of the applied methodology/6/ allows PP to consider minimum sample size as 100 if the target population is more than 1000. This approach is applicable for the current project activity. VVB noted that PP had selected 125 samples using random sample selection procedure/13/ and PP has collected data through Questionnaire survey form used by third party surveyor. The submitted survey/13/ was checked and VVB noted that all the sampled ICS were in operating conditions and hence

		PP has considered value of ICS as 44,648 which is accepted.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	On-site assessment of the project activity and survey records/13/ confirms that the necessary QA/QC procedures are in place and the data management system is effective and reliable. Assessment team verified operational ICS during the on-site visit from ICS survey report.
Findings	No findings were raised.	
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.	

Parameter	$B_{y=1,new,I,j,survey}$ Annual quantity of woody biomass (fuel wood) 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	
Means of verification	**Criteria/Requirements**	**Assessment/Observation**
	Measuring /Reading /Recording frequency	Determined in the first year of project implementation through monitoring survey which is submitted, checked and confirmed.
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the Joint PD & MR and monitoring methodology. This parameter is determined in the first year of project implementation.
	Monitoring equipment	Weighing Scale. VVB noted that PP had purchased new weighing scale/20/ prior to fuel measurement with serial number TMY-1632257 which was pre-calibrated and

		acceptable. The weighing scale will be calibrated annually
	Value applied	3.93 kg/device/day or 1.4345 tonnes/device/year
	How were the values in the monitoring report verified?	PD has decided to conduct monitoring survey and the sample size was selected in line with the 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 surveys. The conducted surveys were submitted and checked by the assessment team and found correct.
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	On-site site assessment of the project activity and checking of survey report[13] confirms that the information flow is maintained and data is recorded. The data management system is effective and reliable. The measurement system needs QA/QC with respect to weighing scale calibration, data entry in the records which was found acceptable.
Findings	No findings were raised	
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.	

The Joint PD & MR formulae for calculating emission reductions, as demonstrated in the applied methodology VMR0006 Version 1.1 have been examined and deemed to be accurate. The Joint PD & MR values and the ER verification sheet values have been compared. Additionally, the formulas used in the ER spreadsheet were examined and confirmed to be in line.

The assessment team certifies that all calculations are performed in accordance with the formulae specified in the applied methodology VMR0006 Version 1.1 and the monitoring plan requirements, that all parameters are used correctly, that all results are transparent and verifiable, and that all assumptions are described and supported by verifiable evidence.

For the monitoring period from 05-December-2022 to 30-April-2023 (inclusive of both the dates) PD has achieved to reduce 68,477 tCO_2e GHG emissions. The ER sheet was used to verify the emission calculation, which was confirmed to be accurate and accepted.

Year	Baseline emissions or removals (tCO_2e)[21]	Project emissions or removals (tCO_2e)	Leakage emissions (tCO2e)	Net GHG emission reductions or removals (tCO_2e)
05-December-2022 to 31- December-2022	2,606	-	-	2,606
01-January-2023 to 30-April-2023	65,871	-	-	65,871
Total	**68,477**	**-**	**-**	**68,477**

4.2 Quality of Evidence to Determine GHG Emission Reductions and Removals

To define and calculate values used for GHG emission determination, PP has used default values as per the applied methodology, baseline and monitoring survey conducted pre and during the project implementation respectively, manufacturer product datasheet, analysis report by 3rd party for ICS efficiency and life time span of ICS.

VVB as a part of desk review and during on-site interviews checked and confirmed these evidences and same were found sufficient and appropriate for the respective values considered. VVB confirms that;

- The submitted evidences were found reliable and the source and nature of the evidence (external or internal, oral or documented) for the determination of GHG emission reductions or removals were checked and confirmed and found appropriate.

[21] The presented values are post application of 5% reduction in operational ICS nos. due to unforeseen reasons by end users.

- The information flow from data generation and aggregation, to recording, calculation and final transposition into the monitoring report is checked and confirmed.
- As a part of monitoring, PP has used weighing scale for measurement of firewood. The weighing scale used was checked, which was newly purchased and was pre-calibrated.

Thus, VVB confirms that the evidence to determine GHG Emission Reductions and Removals for this verification period is sufficient and appropriate.

5 VALIDATION AND VERIFICATION OPINION

EKI Energy Services Limited hired LGAI Technological Center, S.A. (also known as Applus+ Certification), to carry out a joint validation and verification of the VCS project activity "Global Cookstove Program (EKI – Pink City)."

The VCS Standard (version 4.4), VCS Program Guide (version 4.3), and Registration & Issuance Process (version 4.3)/07/ were all used as the foundation for the Joint validation and verification process.

The findings of the joint validation and verification process can each be summed up as follows:

The project activity complies with the requirements of the applied baseline & monitoring methodology, VMR0006, Version1.1/6/, and according to Applus+ Certification, delivers the information in Joint PD & MR as needed by VCS Standard, version 4.4/7(b) /. As previously mentioned, the validation was carried out utilising a risk-based methodology. The project activity is anticipated to reduce emissions by 1,622,675 tCO_2e over the length of its crediting period (seven years).

As stated in the Joint PD & MR /1/, Applus+ Certification concludes the validation with a positive opinion and affirms that the VCS Project Activity "Global Cookstove Program (EKI – Pink City)" complies with all applicable VCS requirements, including those outlined in the CDM Project Standard, version 3.0, methodologies, tools, and guidelines.

The VVB can conclude that the project is likely to achieve estimated GHG emission reduction or removals based on a positive conclusion of the reasonableness of assumptions, limitations and methods that support the estimations of the future activities, provided that actual results may vary since the estimates are based on assumptions that are subject to potential changes during the implementation and monitoring of the project.

Validation Analysis: During the validation process, VVB has ensured the reasonableness of all the assumptions/parameters by using random Sampling methods in line with Standard for Sampling and surveys for CDM project activities and programmes of activities, version 9/18/. VVB also confirms that estimated GHG emission reduction for the project activity are reasonable and

appropriate. However, actual GHG emission reduction may vary at the time of verification as estimates are based on the assumptions.

Verification Analysis: The verification strategy used by Applus+ Certification is based on an understanding of the risks involved in reporting GHG emission data and the mitigation measures put in place. In order to provide a reasonable level of assurance that reported GHG emission reductions are accurately stated, Applus+ Certification prepared and carried out the verification by gathering documentation, additional information, and justifications.

The GHG statement is the responsibility of the project proponent and the project conforms with the validation and verification criteria for projects and their GHG emission reductions or removals set out in VCS Version 4.0.

In our opinion, the joint PD and MR/01/ accurately states the GHG emissions reductions reported for the project activities for the time period of 05-December-2022 to 30-April-2023 (inclusive of both the dates). Based on the approved baseline & monitoring methodology, as well as the VCS standard, the GHG emission reductions were computed accurately.

Estimated Emission reduction over the crediting period are:

Year	Estimated GHG emission reductions or removals (tCO_2e)
05-December-2022 to 31-December-2022	20,980
01-January-2023 to 31-December-2023	282,292
01-January-2024 to 31-December-2024	264,334
01-January-2025 to 31-December-2025	246,818
01-January-2026 to 31-December-2026	229,725
01-January-2027 to 31-December-2027	213,062
01-January-2028 to 31-December-2028	196,816
01-January-2029 to 04-December-2029	168,648
Total estimated ERs	**1,622,675**
Total number of crediting years	**7**
Average annual ERs	**231,810**

Period of verification: from 05-December-2022 to 30-April-2023 (including both days). Verified reduction to and removals from GHG emissions over the aforementioned verification period:

Year	Baseline emissions or removals (tCO_2e)[22]	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
Year A (05-December-2022 – 31-December-2022)	2,606	0	0	2,606
Year B (01-January-2023 to 30-April-2023)	65,871	0	0	65,871
Total	**68,477**	**0**	**0**	**68,477**

Year	Ex-ante emissions reductions/removals	Achieved emissions reductions/removals	Percent difference	Justification for the difference
Year A (05-December-2022 – 31-December-2022)	20,980	2,606	-87.58%	During this vintage, as confirmed from the submitted ER sheet and monitoring database, it was confirmed that All the project ICS were not installed/ commissioned on one date i. e on the first date of crediting period hence the emission reduction achieved during the monitoring period is lower than the emission reduction estimated ex-ante for the same period.
Year B (01-January-2023 to 30-April-2023)	93,246	65,871	-29.36%	

[22] The presented values are post application of 5% reduction in operational ICS nos. due to unforeseen reasons by end users.

				VVB found this appropriate. Also, on a conservative side, PP has considered 5% ICS as non-operational for the current monitoring period.

APPENDIX 1: DOCUMENT REFERENCES

No.	Author	Title	References to the document	Provider
1.	PP	Joint PD & MR (Initial) Joint PD & MR (Final)	Version 1.0 dated 13-April-2022 Version 7.0 dated 12-June-2024	PP
2.	PP	Actual Emission reduction spreadsheet FNRB calculation sheet Estimated Emission reduction spreadsheet	Version 1.0 dated 31-May-2023 Version 2.0 dated 27-June-2023 Version 3.0 dated 12-June-2024 Version 1.0 dated 31-May-2023 Version 3.0 dated 08-February--2024	PP
3.	NA	ICS Distribution data Carbon waiver records of ICS/End user agreements	-	PP
4.	PP	Declaration(s) from Project proponent on double accounting		PP
5.	NA	Efficiency certificate of ICS issued by IIT Delhi	09-July-2022	PP
6.	NA	VMR0006 Methodology for Installation of High Efficiency Firewood Cookstoves	https://verra.org/methodologies/vmr0006-methodology-for-installation-of-high-efficiency-firewood-cookstoves/	VERRA
7.	NA	VCS Requirements: a) Verified Carbon Standard Program Guide, version 4.3; b) Verified Carbon Standard, version 4.4; c) VCS Program Definitions, version 4.3 d) VCS Registration and Issuance Process, version 4.3 e) VCS Joint Project Description & Monitoring Report Template, version 4.2 f) VCS Joint Validation & Verification Report Template, version 4.2	-	VERRA
8.	NA	Life span certificate	Manufacturer's specification	PP

No.	Author	Title	References to the document	Provider
9.	NA	Site assessment –interviews of staff personnel, photographs, physical inspection of monitoring system	-	PP
10.	PP	Employment records	-	PP
11.	PP	Skilled training records	-	PP
12.	PP	Local Stakeholder Meeting records	-	PP
13.	PP	ICS Survey Report Distributed ICS Database	-	PP
14.	UNFCCC	Methodological Tool: Calculation of the fraction of non-renewable biomass, version 4.0	https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-30-v4.0.pdf	UNFCCC CDM page
15.	PP	Photos of grievance register		PP
16.	PP	Sample copy of carbon waiver records		PP
17.	-	Technical Specifications of the ICS		PP
18.	UNFCCC	Standard for Sampling and surveys for CDM project activities and programmes of activities, version 9.	https://cdm.unfccc.int/Reference/Standards/index.html	UNFCCC CDM page
19.	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories	https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf	IPCC
20.	Other	Weighing scale invoice	06-April-2023	Other
21.	Forest Survey of India	Report by Forest Survey of India in 1987 https://fsi.nic.in/documents/sfr_1987_hindi.pdf		PP
22.	CDM	CDM Website	https://cdm.unfccc.int/Projects/projsearch.html	Publicly available
23.	GCC	GCC Registry	https://projects.globalcarboncouncil.com/pages/submitted_projects	Publicly available
24.	Gold Standard	Gold Standard for Global Goals (GS4GG) Registry	https://registry.goldstandard.org/projects?q=&page=1	Publicly available

APPENDIX 2: ABBREVIATIONS

Abbreviations	Full texts
BIS	Bureau of Indian Standard
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM VVS	Clean Development Mechanism Validation and Verification Standard
ER	Emission Reductions
CL	Clarification Request
DOE	Designated Operational Entity
DNA	Designated National Authority
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
ICS	Improved Cook Stove
IPCC	Intergovernmental Panel on Climate Change
Joint PD & MR	Joint project description and monitoring report
MP	Monitoring Plan
MR	Monitoring Report
PD	Project Description
PP	Project Proponent
PS	Project Standard
TR	Technical Review
UNFCCC	United Nations Framework Convention on Climate Change
VCU	Voluntary Carbon Unit
VVB	Validation and Verification Body
VVS	Validation and Verification Standard

APPENDIX 3: FINDINGS OVERVIEW

Table 1. CL from this validation and verification

CL ID	01	Section no.	3.1	Date : 24-May-2023
Description of CL				
1. As per the Joint PD & MR template V4.2, PP shall mention the table including all the monitoring periods, including the monitoring period for current verification in section 1.1. Clarification sought. 2. Under section 1.4, Eligibility criteria (grouped project), PP shall justify/ explain how the project activity instances complies with each criterion. Clarification sought. 3. Under section 1.5, PP to mention the details of the project proponent as per the template requirement. 4. In section 1.6, PP to clarify if any other entities are involved in the project. 5. In section 1.16.3, PP to demonstrate the supply chain emissions, if applicable. Clarification sought. 6. As per the Joint PD & MR template V4.2, PP shall describe how the project contributes to achieving any nationally stated sustainable development priorities, including any provisions for monitoring and reporting same in section 1.17.1. Clarification sought. 7. As per the Joint PD &MR template V4.2, PP shall provide A summary description of project activities implemented during the monitoring period that result in SD contributions (i.e., technologies/measures implemented, activity location). Clarification sought.				
Project participant response				**Date :** 31-May-2023
1. Table outlining the information regarding the monitoring period is included in section 1.1. 2. Detailed explanation is provided under section 1.4 on how the project activity instances is complying to the Eligibility criteria (grouped project). 3. Details of the project proponent is included under section 1.5 4. Details of ICS distribution agency (Aransh Agro) and ICS manufacturer (GHG Reduction Technologies Pvt LTD) is included under section 1.6 of the joint PD&MR. 5. No supply chain emission is associated with the project activity. Clarification regarding the same is included under section 1.16.3 of the joint PD&MR. 6. Detailed brief about the project contribution to nationally stated sustainable development priorities is included under section 1.17.1. of the joint PD&MR. 7. Detailed information relating to the SD contribution is included under section 1.17.2 for the joint PD&MR.				
Documentation provided by project participant				
1. Revised version of the joint PD&MR. 2. Employment declaration by ICS manufacturing company to establish SD contribution 3. Employment declaration by ICS distribution company to establish SD contribution				
VVB assessment				**Date:** 02-June-2023

1. PP has now submitted the revised PD&MR wherein the section 1.1 has been updated with the table depicting the details regarding the monitoring period, VVB name and the total no of years for crediting period, made in line with the VCS PD&MR template guidelines. Hence this point is closed.
2. Section 1.4 of the revised PD&MR has now been updated mentioning the applicability criterias of the applicable methodology as well as tools, i.e. Tool 30, hence made in line with the VCS PD&MR template requirements. This point is thus closed.
3. PP has now mentioned the Project Proponent details under section 1.5, which is now made in line with the VCS PD&MR template requirements, hence found appropriate. This point is now closed.
4. Also, section 1.6 has now been updated mentioning the other entities involved in the project in the revised PD&MR submitted by the PP, hence this point is also closed.
5. Section 1.16.3 has also now been updated by the PP, elaborating about the supply chain emissions, which is now made in line with the VCS PD&MR requirements, hence this point is closed.
6. Section 1.17.1 of the revised PD&MR has now been updated with the relevant sustainable development contributions as per the VCS template requirements, hence acceptable.
7. As per the revised PD&MR submitted by PP, section 1.17.2 has now been updated by mentioning the SDG's impacted due to the implementation of the project activity, while submitting the appropriate supporting document for the same i.e. training declaration and attendance sheet conducted by the manufacturer, hence found acceptable to the assessment team.

CL 01 is closed.

CL ID	02	**Section no.**	3.3.2	**Date :** 24-May-2023
Description of CL				
Under section 2.2, PP has mentioned that "The Minutes of meeting with stakeholders' queries, invitation letter will be submitted to the VVB. The list of all attendees of the meeting is attached in the Appendix section of this report". However, the same has not been mentioned in the appendix of the Joint PD and MR. Clarification sought.				
Project participant response				**Date :** 31-May-2023
The list of attendees is included in the annex of the joint PD&MR. Minutes of meeting , public notice used for invitation of stakeholders and attendance sheet submitted to VVB.				
Documentation provided by project participant				
1. Revised joint PD&MR 2. Minutes of meeting 3. Public notice used for invitation of stakeholders 4. Attendance sheet				
VVB assessment				**Date:** 03-June-2023
The revised joint PD&MR was submitted by the PP. it was checked & found that the appendix 1 has now been included in the end of the report as the list of stakeholder attendees, which is in line with the supporting list provided to the assessment team during the desk review. Along with this, the public notice sent before the meeting & the stakeholder feedback was also submitted by the PP to the team, which was found acceptable. **CL 02 is closed.**				

CL ID	03	**Section no.**	3.4.1	**Date :** 24-May-2023
Description of CL				

1. Footnote 2 & 3 is not accessible. 2. PP has mentioned Tool 30 - calculation of the fraction of the non-renewable biomass. PP shall demonstrate the applicability of the mentioned tool along with fNRB calculation sheet.
Project participant response **Date :** 31-May-2023
1. Link of footnote 2 (currently foot note 7) & 3 (currently foot note 8) is revised. The literature referred to in the footnote is downloaded and submitted. 2. Applicability of tool 30 is included in the revised joint PD&MR
Documentation provided by project participant
1. Revised joint PD&MR 2. Reference literature referred to in footnote 2 and 3
VVB assessment **Date:** 03-June-2023
1. The revised PD&MR was checked by the assessment team, and it was found that the footlinks 7 & 8 under the section 3.2 has now been revised by the PP, which reflects the following documents – *The state of forest report 1987 & THE WOODFUEL SCENARIO AND POLICY ISSUES IN INDIA published by the FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS Bangkok, April 1997,* from which the data is correctly mentioned in the PD&MR hence aceptable by the VVB team. This point is thus closed. 2. Section 3.2 of the revised PD&MR has now been updated depicting the applicability of tool 30 - Calculation of the fraction of non-renewable biomass – Version 4.0, wherein the specific value for fNRB for Indian State of Madhya Pradesh is mentioned, hence meeting the conditions of joint PD&MR V 4.2 template guidelines. this point is therefore closed. **CL 03 is now closed.**

CL ID	04	**Section no.**	3.4.6	**Date :** 24-May-2023
Description of CL				
1. Under section 5.1 and 5.2, PP has mentioned “Please refer to section 4.4”. PP to clarify the reference of the section. 2. Links of footnote 6, 7 and 8 are not accessible. Clarification sought.				
Project participant response				**Date :** 31-May-2023
1. The statement is corrected 2. All the footnote links are updated				
Documentation provided by project participant				
1. Revised joint PD&MR				
VVB assessment				**Date:** 06-June-2023
1. The section 5.1 & 5.2 has now been corrected by the PP, statements are now revised providing the estimated GHG emission reductions & removals under baseline as well as project emissions, hence fulfilling the VCS PD&MR template requirements, thus this point is closed. 2. The referral foot links are now updated and accessible in all the sections of the PD&MR. hence this point is closed. **CL 04 is closed.**				

Table 2. CAR from this validation and verification

CAR ID	01	**Section no.**	3.4.3	**Date :** 24-May-2023
Description of CAR				

1. Under section 3.3, it is written that "Define the project boundary and identify the relevant GHG sources, sinks and reservoirs for the project and baseline scenarios (including leakage if applicable)". PP to clarify the requirement of the same. 2. PP shall provide the justification/ explanation for the emission sources considered in the project boundary in section 3.3 . Corrective action request sought. 3. Under section 3.4, PP shall justify the baseline scenario in accordance with the applied methodology and mentioned tools. PP to describe each step as per the methodology along with the outcome. Corrective action request sought.
Project participant response **Date :** 31-May-2023
1. GHG sources associated with the baseline and project scenario is elaborated. Elaboration regarding the leakage is included under section 3.3. 2. Justification/ explanation for the emission sources is included under section 3.3. 3. Baseline scenario is elaborated under section 3.4 of the joint PD&MR in accordance to the methodology.
Documentation provided by project participant
Revised joint PD&MR
VVB assessment **Date:** 06-June-2023
1. Section 3.3 of the revised PD&MR is now updated with the proper justification references for the identification of the relevant GHG sources, sinks and reservoirs for the project and baseline scenarios, which is now made in line with the VCS joint PD&MR template instructions, hence this point is closed. 2. PP has now updated section 3.3 of the joint PD&MR providing with justification/explanation for the relevant gases, hence made in line with the VCS joint PD&MR template guidelines, thus this point is closed. 3. The revised PD&MR was submitted by the PP, stating the identification & justification in accordance with the procedure set out in the applied methodology and any relevant tools, hence in line with the template guidelines. The point is thus closed. **CAR 01 is closed.**

CAR ID	02	**Section no.**	3.4.2	**Date :** 17-May-2023
Description of CAR				
PP to demonstrate the implementation status of the project activity as per the template requirement under section 4.1.				
Project participant response				**Date :** 31-May-2023
Implementation status of the project activity included under section 4.1 of the Revised joint PD&MR				
Documentation provided by project participant				
Revised joint PD&MR				
VVB assessment				**Date:** 06-June-2023
The section 4.1 of the revised PD&MR submitted by the PP now clearly states the current implementation status of the project activity, which describes that only one type of stove model (AGNEEKAA ECO MINI STOVE MODEL 4 SE) was distributed in the Project, and that there has been no adverse incident occured yet that could have impacted the estimated GHG emissions. This was cross-checked by interviewing local stakeholder & monitoring personnel during the on-site inspection, hence acceptable to the assessment team. **CAR 02 is now closed.**				

CAR ID	03	Section no.	3.4.6	Date : 17-May-2023
Description of CAR				
Under section 5.4, PP has mentioned that the annual stove loss rate is estimated at 0% under ex-ante calculation purpose. However, the same is not part of ex-post parameters in section 6.2.				
Project participant response				**Date :** 31-May-2023
Annual stove loss rate of 5% is assumed for ex-ante emission reduction with the condition that for ex-post emission reduction the value of drop in cookstove usage will be based on the finding of survey. Section 7.5 of the PD &MR has been updated to include the information relating to proportion of ICS usage drop.				
Documentation provided by project participant				
Revised joint PD&MR				
VVB assessment				**Date:** 06-June-2023
It was confirmed by the PP that the annual stove loss rate of 5% has been assumed with the condition that the value of drop in cookstove usage is based on the finding of first monitoring survey, wherein a reduction of 5% has already been considered by the PP in the period for which the ICS is in operation for current monitoring period thereby resulting in 5% reduction applied for ex-ante emission reduction. This has also been justified under the section 7.5 of the PD&MR, hence found ok. **Car 03 is closed.**				

CAR ID	04	Section no.	3.4.5	Date : 24-May-2023
Description of CAR				
As per the applied methodology VMR0006,"*The project must demonstrate that it meets all of the applicability conditions of the methodology as well as the below condition*." in section 3.5.				
Project participant response				**Date :** 31-May-2023
The additionality section indicates that the project activity instances *meet all of the applicability conditions of the methodology*				
Documentation provided by project participant				
Revised joint PD&MR				
VVB assessment				**Date:** 06-June-2023
The revised PD&MR has been submitted by the PP. it was found that the section 3.2 demonstrated that the project activity instance meets the applicability conditions of the methodology which represent the positive list hence deemed additional. Besides, other conditions as described under section 3.5 also reflects the accurate assessment of additionality of the project activity. **CAR 04 is closed.**				

CAR ID	05	Section no.	3.4.8	Date : 24-May-2023
Description of CAR				
Section 6.3 of Joint PD MR shall provide the following information in line with the template requirements; 1. The organizational structure, responsibilities and competencies of the personnel that carried out monitoring activities. 2. The procedures used for internal auditing and QA/QC. 3. The procedures used for handling any internal auditing performed and any non-conformances identified. 4. PP has mentioned the sampling plan however, calculation for the same is not mentioned. PP shall demonstrate whether the required confidence level or precision has been met.				
Project participant response				**Date :** 31-May-2023

1. The organizational structure, responsibilities and competencies of the personnel that carried out monitoring activities are elaborated under section 6.3 of the joint PD&MR. 2. The procedure for internal auditing and QA/QC is included under section 6.3 of the joint PD&MR. 3. Reference document for spot check submitted and no non-conformance is identified. 4. Detailed explanation is provided as a part of the sample size estimation under section 6.3. In accordance to the methodology for a sample size of 100, confidence level or precision is not required to be considered.
Documentation provided by project participant
Revised joint PD&MR
VVB assessment **Date:** 06-June-2023
As per the revised PD&MR submitted by the PP, under section 6.3: 1. PP has now mentioned organizational structure, responsibilities and competencies of the personnel that carried out monitoring activities which is now made in line with the VCS joint PD&MR template guidelines, hence found satisfactory. 2. The procedure for internal auditing and QA/QC has now been elaborated in accordance with the VCS joint PD&MR template guidelines, hence acceptable. 3. The procedure followed to handle internal audits conducted, and the internal audit spot check register, wherein the data for all the monitored cookstoves has been complied, this acceptable. 4. As cross-checked with the applicable methodology VMR0006 para 8.4 (b), *the simplified approach may also be used for determining minimum sample size for parameters listed under Sections 9.1 and 9.2 in which case it is not requisite for the sample size to meet confidence/precision requirements*, hence justification now included in the PD&MR now found acceptable by the assessment team. **CAR 05 is closed.**

Table 3. FAR from this validation and verification

FAR ID	01	**Section no.**	3.4.8	**Date :** 24-June-2023
Description of CAR				
1. If PP uses/adds a new type of cookstove, Verifying VVB to check and confirm that efficiency of the of the same shall be established ex-ante by the PP. 2. If the project boundary is expanded to other areas within the India, PP to conduct local stakeholder consultation meeting to be / for added ICS from that area.				
Project participant response				**Date :**
Documentation provided by project participant				
VVB assessment				**Date:**

APPENDIX 4: COMPETENCY STATEMENTS

No.	Role	Type of resource	Last name	First name	Affiliation (e.g. name of central or other office of DOE or outsourced entity)	Involvement in			
						Desk review	On-site inspection	Interviews	Verification findings
1.	Lead Auditor/Technical Expert	OR	Pundlik	Deepak	TQC-Outsourced entity	Yes	Yes	Yes	Yes
2.	Technical Expert in Training	OR	Srivastava	Ishan	TQC-Outsourced entity	Yes	Yes	Yes	Yes

Technical reviewer and approver of the verification and certification report

No.	Role	Type of resource	Last name	First name	Affiliation (e. g. name of central or other office of DOE or outsourced entity)
1.	Technical reviewer (TR)	EI	Agarwal	Nikunj	Applus+ Certification
2.	Approver	IR	Calle de Miguel	Agustin	Applus+ Certification

Short CVs of the Team:

1) **Mr. Deepak Pundlik** has experience in climate change, waste management and environmental management. After completing Masters in Environment Sciences from Pune university, He has worked in waste management field. As a GHG consultant, he handled projects under renewable energy, waste management sectors during his stint with companies - MITCON and Thermax Limited. As a GHG auditor, he has validated/verified projects under CDM/VCS/GS and GCC mechanisms from renewable energy, energy demand, waste management sectors.

2) **Mr. Ishan Shrivastava**, has done bachelor of engineering in Mechanical Engineering from Rajiv Gandhi Proudyogiki Vishwavidyalaya, India. He has a year of working experience in India's one of the Maharatna Company i.e. GAIL (India) Limited in the area of Natural Gas, Energy & Environment. Currently. he is working in True Quality Certifications Pvt. Ltd. (An outsource entity for LGAI Technological Center, S.A. (Spain) "Applus+ Certification") since 2019 and has been involved in supporting Audit teams for Verifications of Project Activities (Renewable and non-Renewable projects) under CDM/VCS/GS4GG programs.

3) **Mr. Nikunj Agarwal** has very extensive experience (17 years) in the field of carbon market. He had been working with the different Europeans DoE's (Verification Bodies) accredited by UNFCCC for the Carbon Credits Certification. He had also worked as consultant for Energy Efficiency projects. Apparently, he had worked as Monitoring and Verification Experts in Energy Efficiency Projects. He had worked more than 300 Carbon projects under CDM/VCS/GS) in South Asia and others Region such as: India, Philippines, Malaysia, Fiji, Indonesia, China, Israel, Pakistan, Chile, Peru, Columbia, South Africa, Singapore, Nepal & Thailand. He is the Certified Energy Manager by the Bureau of Energy Efficiency, Government of India. He is in the Pool of Methodology Expert by the UNFCCC. He was part of the Gold Standard Advisory Panel for the CLIMATE SMART AGRICULTURE (CSA). Mr. Nikunj Agrawal is based in Kronberg, Germany. Mr. Nikunj Agarwal participates as a Technical Reviewer for the assessment.