



**Verified Carbon
Standard**

SMG – COOKSTOVE PROGRAM 20



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Summary:

LGAI Technological Center S.A. (hereinafter referred to as Applus+ Certification) is contracted by M/s Shri Maa Marketing Private Limited to conduct the joint validation and verification of the project “SMG – Cookstove Program 20”, VCS ID 4661 against VCS standard version 4.5/7(b)/

The Group 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 4661) is also implemented, and the monitoring methodology is used in accordance with the VCS methodology VMR0006 “Methodology for Installation of High Efficiency Firewood Cookstoves”, Version 1.2 /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 different cities of Madhya Pradesh, state of India. The Improved cookstove 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 53,826 tCO₂e/year and 376,784 tCO₂e will be reduced during the course of the seven years of the crediting period. During the 1st monitoring period from 01-January-2023 to 30-September-2023 (inclusive of both the dates), 61,146 tCO₂e 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 onsite visit, 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 and Verification 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 and verification.

A review of the Joint PD & MR that is impartial and unbiased is what is meant by the validation and verification scope. The VCS Program Guide (v4.4), VCS Standard (v4.5), Program Definitions (v4.4), Registration & Issuance Process (v4.4) 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 1.2/6/.

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 and validation. 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 09 Clarification Requests (CLs) were raised during joint validation and verification and successfully closed. No FAR raised during the current monitoring 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 4.5 (partially¹), and the applied methodology VMR0006, Version 1.2. 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 "SMG – COOKSTOVE PROGRAM 20" reduced emissions by 61,146 tCO₂e from 01-January-2023 to 30-September-2023, including both the days.

¹ <https://verra.org/wp-content/uploads/2023/09/August-2023-Overview-of-VCS-Program-Updates-Effective-Dates-Updated-25-September-2023.pdf>

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1 INTRODUCTION

1.1 Objective

LGAI Technological Center S.A. (hereinafter referred to as Applus + Certification or the VVB) Applus+ Certification has been contracted by Shri Maa Marketing Private Limited (project proponent), to undertake the joint validation and verification of the project titled “SMG – COOKSTOVE PROGRAM 20”. The assessment team have reviewed the GHG data collected for the monitoring period from 01-January-2023 to 30-September-2023 (both days included) covered in this Joint validation and 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;

VCS Registration and Issuance Process, version 4.3

The project's baseline is assessed against “VMR0006 - Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.2”/6/

The project's monitoring plan is assessed against “VMR0006 - Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.2”/6/

The project's additionality justification is assessed against “VMR0006 - Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.2”/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 4.5 /07/

VCS standard version 4.5 /07/

VCS program guide version 4.4 /07/

LGAI Technological Center, S.A. (Applus+ Certification) as the Validation/Verification Body (VVB) for the project activity is accredited as a DOE by UNFCCC and also meets the competence requirements as set out in the normative reference ISO 14065:2020.

Validation and verification are a requirement for all VCS projects and are seen as necessary to, through the provision of objective evidence, provide assurance to stakeholders of the quality of the project and that the requirements for a specific intended future use or application have been fulfilled regarding the GHG claims (i.e. generation of estimated/real 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

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 1.2)/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 (v4.5) and VCS program guide (v4.4) 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 (v4.5²); the VCS program guide (v4.4).

²<https://verra.org/wp-content/uploads/2023/09/August-2023-Overview-of-VCS-Program-Updates-Effective-Dates-Updated-25-September-2023.pdf>

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 “SMG – COOKSTOVE PROGRAM 20”. The verification of this project was based on the validated and Verified VCS joint project description & monitoring report and supporting documents submitted by the project proponent to the verification and validation team. The documents were reviewed against the following guidance and protocols:

- VCS Program Guide (v4.4) /7(a)/
- VCS Standard (v4.5) /7(b) /
- VCS Program Definitions (v4.4) /7(c)/
- VCS Registration & Issuance Process (v4.4) /7(d)/
- VCS approved methodology VMR0006 (version 1.2, dated 06-July-2023) /6/
- CDM Methodology: AMS II.G version 13 - Energy efficiency measures in thermal applications of non-renewable biomass EB115_repan11_AMS-II. G_v13.0 (unfccc.int)
- CDM Tool - “TOOL30 version 4.0: Calculation of the fraction of non-renewable biomass”/14/

The assessment team has employed a risk-based approach to assess the completeness and accuracy of the claims and conservativeness of the assumptions in the Joint VCS PD & MR. The main focus of the assessment team is to identify the significant risks for the project implementation and the generation of VCUs. The joint validation and verification is not meant to provide any consulting towards the project proponent. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the project design.

The only purpose of the joint validation and verification is its usage during the registration & issuance processes as part of the VCS project cycle. Therefore, LGAI Technological Center S.A. (Applus+ Certification) can't be held liable by any party for decisions made or not made based on the joint validation and verification opinion, which will go beyond that purpose.

The validation & verification is not meant to provide any consulting towards the client. However, stated requests 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 joint validation and verification report is based on the joint PD & MR, supporting evidences made available to the VVB and information collected through performing interviews and during the On-site visit (OSV). The validation conclusion is assured a reasonable level of assurance. The joint validation and verification report expresses a conclusion with a reasonable level of assurance about whether the reported GHG emissions reduction data is free from material misstatement. VVB applied a materiality threshold of 5% with respect to omission or misstatements concerning reported quantities as per VCS standard. The level of assurance of the joint validation and verification report falls under reasonable assurance engagements as selected by the PP. The joint validation and verification team validated/verified the random selected samples from project proponent random sample data applied on total household (30,000) and confirms that the reported emission reductions are free from any type of material errors.

1.4 Summary Description of the Project

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

The end-user has been informed 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. Shri Maa Marketing Private Limited 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. Shri Maa Marketing Private Limited prioritized the appointment of a local implementation partner for the delivery of ICS and local men and women teams were deployed and trained for the implementation of ICS. This creates more employment opportunities and increases the income of local agents. Awareness about the implementation of ICS will be provided to the local community through awareness programs.

The project locations for initial Project Activity Instances are in Madhya Pradesh, state of India and may expand further to other parts of India. Shri Maa Marketing Private Limited has distributed 30,000 ICS in Madhya Pradesh 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 01-January-2023 under this grouped project activity. 30,000 project activity instances (ICS) have been implemented as a part of this project activity.

A	Cook Stove type/Category	Shri Stove/Natural draft	
B	Shri Stove Components	Utensil Stand	Utensil stand is designed keeping in mind the different vessel sizes that communities may use on a dailybasis. It goes through a surface chemical treatment process post manufacturing, including 6-tank dips and a hot galvanizing dip to enhance its life and prevent from corrosion.
		Covering Body	Outer covering body is designed for higher durability, keeping in mind more-than-average wear and tear of the stove. It is made up of aluminum, which prevents corrosion and lasts longer. A set of heat insulating bake-lite handles is attached to the body to maneuver stove easily.
		Insulating Skirt	Insulating skirt is designed using the aerodynamics principle to ensure oxygen-rich air reaches the top of stove to provide maximum heat at the surface of the utensil for faster and more efficient cooking. It is also designed to maximize the insulation of heat

			and prevent from corrosion.
		Heat Chamber	Heating chamber is made up of stainless steel to maximize durability and minimize corrosion. The outer chamber has diamond-cut holes to control the flow of air. It also has a layer of our proprietary geo-thermal coating which is approved by an accredited institute to further insulates heat and enhances life.
		Stove Base	Sturdy stove stands are placed at the base of the stove that has precisions holes for primary flow of air. It goes through a surface chemical treatment process post manufacturing, including 6- tank dips and a hot galvanizing dip to enhance its life and prevent from corrosion.
		Glass Wool	For extra insulation of heat, we give an option to add a layer of high-quality glass wool surrounding the conical skirt. It prevents heat leakages throughout the surface and enables communities to

			cook more efficiently.
		Wood Stand	A heavy-duty stand that is built using steel wires is included with the stove for users to be able to have the flexibility to use longer wood sticks, without having to chop them
C	Operational Life	7 Years	
D	Parameters	Unit	Shri Stove+
	Weight	g	3500+
	Top Diameter	cm	26
	Bottom Diameter	cm	26
	Stove top thickness	cm	0.1
	Combustion chamber diameter	cm	12
	Combustion chamber height	cm	22.3
	Length of primary air inlet	cm	15.5
	Height of primary air inlet	cm	12.9
	Area of primary air inlet	sq.cm	200
	Number of primary air holes	cm	21
	Pot rest height	cm	2
	Pot rest length	cm	8
	Distance of handles from stove body	cm	6.5
	Stove height above ground	cm	4
	Length/Diameter of the Grate	cm	12
	Number of Holes on the Grate	nos.	56 holes
	Length of Wood Rest	cm	30
	Skirt Height	cm	21.2
	Skirt Thickness	cm	0.1
	Skirt Diameter – Top	cm	13
	Skirt Diameter – Bottom	cm	19
F	Energy efficiency	35.4 %	

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 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 53,826 tCO₂e per year and 376,784 tCO₂e over the course of the seven-year crediting period.

For current first monitoring period from 01-January-2023 to 30-September-2023, the project has reduced 61,146 tCO₂e 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 Process

Joint validation and verification was conducted using Applus+ Certification's procedures in line with the requirements specified in the VCS standard Requirements 4.5, CDM M&P, the latest version of the CDM Validation and Verification Standard, and relevant decisions of the COP/MOP and the COMEB and applying standard auditing techniques.

The Validation and Verification process has been conducted following the regulatory documents and based on the ISO 14064-3:2019 and ISO 14065:2020 using standard auditing techniques as required by the VCS Standard v4.5.

The Validation and Verification process has been conducted through an onsite inspection (see below), thus, no need for a risk analysis for remote inspections has been determined for this Verification and validation (cf. VCS Standard v4.5. Para 4.1.13).

No ICT means have been used for the conduction of this Verification VCS Registration and Issuance Process, version 4.3 process other than those for the provision of documents and transferring information and undertake normal communications with the PP(s). Those ICT means supporting the process in this sense, have been used to an extent sufficient to cover the background necessities of the Verification and Validation process and have demonstrated enough effectiveness to conduct it in accordance with the relevant applicable regulatory requirements.

No virtual sites have been included in the Joint Validation and Verification process according to the definition in the IAF MD4:2023 document. Instead, the documentation has been provided upon request from the VVB by other means (such as physical documents, mail, transfer applications, etc.)

Before the assessment begins, members of the team covering the technical scope(s), sectoral scope(s), and relevant host country experience for evaluating the VCS grouped project activity are appointed in accordance with the Applus+ Certification's procedures and policies, that are in accordance with the ISO 14065:2020 regulatory provisions.

Applus+ Certification has completed a strategic review and risk assessment of the project's activities and processes in order to gain a full understanding of:

- Activities associated with all the sources contributing to the project's emissions and emission reductions, including leakage if relevant;
- Protocols used to estimate or measure GHG emissions from these sources;
- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying the calculated data; and
- Compilation of the information in the VCS PDMR.

The proposed 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 four 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.

Appointment of the assessment team

According to the sectoral scope / technical area and experience in the sectoral or national business environment, LGAI Technological Center S.A. (Applus+ Certification) has composed a project assessment team in accordance with the appointment rules in the internal Quality Management System of LGAI Technological Center S.A. (Applus+ Certification).

The composition of audit team shall be approved by the LGAI Technological Center S.A. (Applus+ Certification) ensuring that the required skills are covered by the team.

The qualification levels for Assessment Team members that are assigned by aforementioned appointment rules are as presented below:

- Lead Auditor (LA)
- Auditor (A)
- Technical Expert (TE)
- Technical Reviewer (TR)
- Other supporting roles such as Country Expert (CE) or Financial Expert (FE)
- Observer (OBs)

The Sectoral Scope / Technical Area required knowledge linked to the applied methodology(ies) is covered by the Assessment Team as shown below.

Name	Role	SS Coverage	TA Coverage	Financial aspect	Host country experience
Mr. Ishan Shrivastava	LA/TE	YES	YES	NA	YES
Ms. Anjali Singh	TeiT/AiT	NO	NO	NA	YES
Mr. Shubham Kumar	OBs	NO	NO	NA	YES
Mr. Adesh Umardand	OBs	NO	NO	NA	YES
Mr. Simon Shen	TR	YES	YES	NA	NA

The complete list of CVs is included as Appendix 3 of this report.

Internal quality control

As final step of a Joint Validation and Verification, the validation and verification report have to undergo an internal quality control by the technical review committee.

Details of the Technical Reviewer(s) are provided within the Validation and Verification Report in Section B.2. and Appendix 2 for further references of knowledge and capability to conduct the quality checking.

After the Technical Review process, the final documentation may undergo a final quality checking process called Administrative Review, done by the Applus+ Certification's Project Manager and/or Technical Support. For final approval, the final set of documents are prepared by the VVB's Technical Manager or its deputy and signed by the authorized signatory of the VVB.

In case any of the persons performing this final internal quality, control approval process has acted as a part of the Assessment Team or Technical Review team, the approval can only be given by VVB's personnel who are not part of those teams.

After confirmation of the PP, the positive verification opinion and relevant documents are submitted to the VCS board through the VCS registry.

Document review

The Joint PDMR /1/ submitted by the PP was reviewed against the approved methodology/6/, and other relevant criteria to verify the correctness, credibility, and interpretation of the presented information.

Further, a cross-check between information provided and information from other sources has been carried out. A complete list of all documents and evidence material reviewed is included in this report in Appendix 1 below.

Onsite visit: Onsite audit was conducted by LGAI Technological Center S.A. (Applus+ Certification) and interviews of project stakeholders were done to confirm selected information and to resolve issues identified in the document review. The detail is provided in this report in the below sections.

Sampling Process

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 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 01 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 20 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 15 randomized households from state for acceptance surveying based on PP's database. The households were chosen from the Madhya Pradesh, households already surveyed by the PP. The choice of 8 households is the minimum allowed number of samples as per the sampling standard with 0 acceptance number. Since this is an acceptance sampling, no oversampling was attempted by VVB, as it would go against the sampling guidance.

The table from the standard ³is provided below and the AQL, UQL, producer and consumer risk is highlighted for the present project activity decided by the VVB

Producer Risk			5%	5%		5%		5%	
Consumer Risk			5%	10%		15 %		20 %	
AQL	UQL	Sample Size(n)	Acceptance Number (c)	Sample Size(n)	Acceptance Number (c)	Sample Size (n)	Acceptance Number (c)	Sample Size (n)	Acceptance Number (c)
0.5 %	10 %	46	1	38	1	33	1	29	1
0.5 %	15 %	30	1	25	1	22	1	10	0
0.5 %	20 %	22	1	18	1	9	0	8	0
1.0 %	10 %	61	2	52	2	33	1	29	1
1.0 %	15 %	30	1	25	1	22	1	19	1
1.0 %	20 %	22	1	18	1	16	1	14	1
Producer Risk			5%	5%		5%		5%	
Consumer Risk			5%	10%		15%		20%	

³ https://cdm.unfccc.int/sunsetcms/storage/contents/stored-file-20210531160756223/Meth_Stan05.pdf

AQL	UQL	Sample Size (n)	Acceptance Number (c)	Sample Size (n)	Acceptance Number (c)	Sample Size (n)	Acceptance Number (c)	Sample Size (n)	Acceptance Number (c)
0.5 %	10 %	46	1	38	1	19	0	16	0
0.5 %	15 %	19	0	15	0	12	0	10	0
0.5 %	20 %	14	0	11	0	9	0	8	0
1.0 %	10 %	46	1	38	1	33	1	29	1
1.0 %	15 %	30	1	25	1	22	1	10	0
1.0 %	20 %	22	1	18	1	9	0	8	0

VVB team chosen 8 randomized households from state for acceptance surveying based on PP's database. The households were chosen from the Madhya Pradesh, households already surveyed by the PP. The choice of 8 households is the minimum allowed number of samples as per the sampling standard with 0 acceptance number. Since this is an acceptance sampling, no oversampling was attempted by VVB, as it would go against the sampling guidance. with 5% producer risk and 20% consumer risk, however on conservative approach total 15 samples were visited. The identified 15 no's beneficiaries based on the above criteria chosen randomly from the beneficiary database is as follows;

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

Name	Survey ID number	Village	District	Points discussed
Madhya Pradesh				-General information Number of people in household -Baseline stove type -Baseline fuel type -Baseline cook time
Devki Uike	AH4131	Banspur	Betul	
Ranga Dhurve	AH6844	Temni	Betul	
Pooja Uikey	AH6854	Temni	Betul	
Umirla Bai	AH4102	Barkheda Salam	Bhopal	
Sumantra Bai	AH6893	Acharpura	Bhopal	
Alisha Bi	AI8000	Bija Dongri	Bhopal	
Chhotibahu Gound	AH6213	Hardua Mudar	Damoh	
Halki Bai	AI7849	Khoha	Raisen	
Gajraj Singh	AI6601	Kharbai	Raisen	

Babulal Ahirwar	AI6693	Khoha	Raisen	Environmental and health issues of Baseline stove
Pan Bi	AI6686	Semra	Raisen	
Rekha Raut	AG6398	Gadoli Khurd	Sagar	
Ramesh Adivasi	AH6352	Baheriya Sahni	Sagar	
Archna Archna	AH0433	Bhugawali	Sagar	
Laxmi Laxmi	AH6203	Bhainsa	Sagar	

Validation and Verification schedule:

Sr. No.	Description	Date
1	Desk review of the documents	01-February-2024 to 09- February-2024
2	Onsite visit	24-January- 2024 to 30-January -2024
3	Release of Findings	01-February-2024

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. ID No.
 - c. Age, Gender
 - d. Household location
2. Old cookstoves situation
 - 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? Mud stove 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. Is there any difference in usage of project cookstove between dry and wet seasons?

Feedback Received through the Interview: All the interviewees provided the general information of households. There are 3-8 people in their household. All of them are the main user of the Project Cookstove at home. They received the cookstoves free of cost from PP. All of them confirmed that they have waived ownership of ERs before used the Cookstove. When they bought the stoves, the receipts were received. All of them confirmed that they start using the cookstove the same day as the purchase day. Their cookstoves have unique serial numbers. Before using the Project Cookstove, training sessions were conducted on how to use the Project Cookstove. After using the Project Cookstove, PP representative had visited to their home to check the use of their Cookstoves. All of them use the stove every day. The old stoves they used were Three-stone fire stove. They used firewood for their old stoves. All of them used 1 project cookstove at home. They use firewood for their project stoves. None of them still using the old stoves. All of them thought the project cookstove is cleaner than the old ones, bringing less smoke, less respiratory issues, less itching issues. All of them thought using a project cookstove saves fuel (also money and time) compared to using the old stoves. All of them confirmed there are no difference between dry and wet seasons in usage of project stove.

Through interviews and onsite visit, the assessment team confirms the baseline scenario, baseline and project fuel type, additionality, local stakeholder consultation and its feedback. Thus, the assessment team achieved a reasonable level of assurance by conducting an onsite site- visit of end-users.

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. The 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 (As mentioned in Appendix 04 below) visited the site between 24-January-2024 to 30-January-2024. 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	Ms. Prachi Singh	Project consultant	OYU Green
2	Mr. Lokesh Malavi	Stove Distributer	Shri Maa Marketing Private Limited
3	Mr. Deep Gupta	PP Representative	Shri Maa Marketing Private Limited

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

A total 15 sample were visited as part of the site visit.

The assessment team visited the multiple location between 24-January-2024 to 30-January-2024 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.
- A cross check of Local stakeholder consultation and training related details
- A review of the SDG parameters such as improvement of reduction of fuel wood expanses, saving wood fuel, improvement of indoor air quality, time spent on cooking and meaningful employment that is provided to SMG buddies.

- A cross check of baseline study report and baseline survey/27/ that was conducted by the project proponent.

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 proponents, 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 proponents, 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 proponents;

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 proponents.

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 09 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 proponents during the assessment. The section also covers the Project proponents' 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 no FAR issues have been raised.

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.

The project activity started on 01-January- 2023, 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.

A 07-year crediting period is expected to result in annual emission reductions of 53,826 tCO_{2e} and 376,784 tCO_{2e} over the seven-year crediting period, which runs from 01-January-2023 to 31-January-2029 (inclusive of both dates).

Details of PP:

Organization name	Shri Maa Marketing Pvt. Ltd.
Contact person	Mr. Deep Ram Gupta
Title	Vice President – Carbon Business Development
Address	Plot 1, Sector C, Govindpura Industrial Area, Bhopal, India – 462023
Telephone	+91- 989 375 8888
Email	deep.gupta@shrimaagroup.in

VVB team verified the details about the project proponent from the project web page of the registry and found the data consistent.

Other entities involved in the project is as follows:

Organization name	N/A
Contact person	N/A
Title	N/A
Address	N/A
Telephone	N/A
Email	N/A

VVB team verified the details about the project proponent form the project web page ⁴of the registry and found the data consistent.

No other entity is involved in the project activity.

Assessment team has verified the ownership of the cookstoves with the help of the End user agreement and found that it lies with the end-users. Moreover, Ownerships of carbon rights is with the Shri Maa Marketing Pvt. Ltd., which was also confirmed with the help of end-user agreements. 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.

Currently only one type of cookstove is distributed. the assessment team has checked the technical details of the cook stoves with the help of technical specification brochure provide by the PP. Assessment team has also confirmed the efficiency with same document. Efficiency is also crosschecked with the help of third-party efficiency certificates and found it correct and accurate. Hence accepted.

VVB team has also confirmed with the PP that there is no commercial sensitive information that is being withheld.

Contributions related to the Sustainable development Goals are mentioned in the section 4.1 of this document. Same is checked and confirmed by the VVB team.

The project has reduced 61,146 tCO₂e GHG emissions during the first monitoring period, which is from 01-January-2023 to 30-September-2023 (inclusive of both the dates).

The current initiative is a voluntary endeavor by the project proponent because there is no mandatory rule or regulation in the host country – India mandating the implementation of ICS. The project complies with all applicable statutes, laws, and regulatory frameworks. No Indian regulations, ordinances, or other regulatory frameworks are violated by the project.

Since the project activity is planned to be in multiple states and distribution will be in phases, The Geographical area of project activity is considered as Madhya Pradesh State of India. For the first instance PP stoves are distributed in the state of Madhya Pradesh. The geo co-ordinates for the state of Madhya Pradesh mentioned in the Joint PD&MR were checked against the

⁴ <https://registry.verra.org/app/projectDetail/VCS/4661>

https://www.mapsofindia.com/lat_long/madhyapradesh/ and found to be correct. VVB during the onsite audit confirms the location of the distributed stoves and found the data mentioned in the Joint PD&MR to be consistent.

PP has submitted the declaration that the project is not rejected by any other GHG registry. Same declaration mentions that the project is not registered/seeking registration in any other GHG registry apart from Verra. VVB has verified the declaration and checked various registries including GS, GCC, CDM etc. and found that the project is not registered in any of them.

PP has also submitted the declaration that the emission generated from the project activity will not include in the Emissions trading programs or for any other binding limits. Moreover, PP has not claimed any other forms of environmental credit and will not claim from the project activity.

PP has considered the scale of the project activity as “Project” based in the number of estimated emission reductions from the project activity. Assessment team has crosschecked and found that the estimated annual emission reduction 53,826 is less than 300,000 tCO₂ hence project is not large scale it is just project.

There exists no mandatory law or regulation in the host country requiring the introduction of ICS in India, therefore the project is a voluntary effort by the project proponent. PP will distribute ICS free of cost to the end users.

The project is in compliance with relevant laws, statutes and other regulatory frameworks. The project does not violate any laws, statutes and or other regulatory frameworks in India.

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.

VVB team confirm that, team has confirmed that, PP conducted the baseline survey during the month of December, 2022 (from 04-December-2022 to 29-December-2022) i.e., before the 1st installation and commissioning of ICS, and copy of the baseline survey record are submitted which was checked and found acceptable to the assessment team.

The procedures for identifying the baseline scenario have been correctly followed and the identified scenario reasonably represents what would have occurred in the absence of the project. VVB confirms that the information provided in the joint PD&MR and the applied methodologies, tools, and documentary evidence are correctly quoted/interpreted and undertaken to a high standard.

The baseline for this project is located in the Madhya Pradesh where a similar project has already been implemented (VCS 3769⁵). Accordingly, the baseline for this project is the ongoing use of non-renewable wood fuel in traditional cookstoves or Mud stove fire stove within a specific region. Additionally, a baseline survey is carried out at the project site to ensure the baseline situation. Based on the survey it is confirmed that a traditional cookstoves or Mud stove fire stove is being used in project location. The baseline survey conducted by PP has also established that there is no LPG used within the surveyed households.

⁵ <https://registry.verra.org/app/projectDetail/VCS/3769>

This assessment is now included in the section 3.4.4 of the report. Additionally, a baseline survey is conducted at the project site to ensure the baseline situation. Based on the survey, it is confirmed that traditional cookstoves or Mud stove fire stoves are being used in the project location.

Detail about the baseline survey: -

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, 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.

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

As confirmed by the assessment team, 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; The project stoves have high-power thermal efficiency of 35.4% as confirmed based on the manufacturer's specifications provided ICS exclusively use woody biomass (fuel wood) and are single pot; Moreover, three ICS were distributed to the Maulana Azad National Institute of Technology Bhopal (MANIT) had performed the efficiency test and MANIT Bhopal certified that, devised has comply with the Water Boiling Test Protocol 4.2.3 as required by the applied methodology and had efficiency of 35.40%.

Since 31-December-1989, non-renewable biomass has been used in India, according to secondary research/22/ that is noted by PP in the joint PD and MR;

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 under any other GHG program.

The assessment team affirms that the description provided in the Joint PD & MR/^{1/} 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/^{1/}

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 3.6.16 of VCS project standard Version 4.5/7(b)/, 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 35.4% 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 3 rd party testing report). Hence applicable and accepted.
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 3 rd party testing report) Moreover during the onsite audit and interview with the beneficiaries VVB team found that, no money has been taken by the PP from the beneficiaries. Hence applicable and accepted.
4	Are subject to the baseline scenario determined in the project description	The new project activity instances will be installed within Madhya Pradesh. Subject to the same baseline scenario determined in Section with reference	All the cookstoves are distributed within Madhya Pradesh.

	for the specified project activity and geographic area.	to clause 3.5.3 of VCS standard, version 4.5/07/.	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 program 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 positive list as it satisfies criterion 1 where it meets all the applicability conditions of the methodology. Project activity distributes stoves at zero cost to the end-user and has no other source of revenue other than the sale of GHG credits, the project activity shall be deemed additional. Project activity is not implemented as part of government schemes or supported by any multilateral funds; the project activity shall be deemed additional.	Since each instance is within India and there is no mandated government program in host country for distribution of cookstove. 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	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	Since the project activity instances I have the same model and expected annual energy saving for each instance is less than 0.0064 GWh_{th}/y

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 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	installed have/will have the same model, hence expected annual energy saving for each instance is less than 0.0064 GWhth/y As per section 2.2 para 4, AMS-II.G, the aggregate energy savings of a single project activity shall not exceed the equivalent of 60 GWh per year in fuel input, which satisfies the condition. Each project activity instance is within the capacity limit of thermal energy saving of 180GWh_{th}/y and does not exceed the capacity limit. Also, each project activity instance is not within 1 Km, thus cluster of project activity instances is not applicable	As the annual energy saving is below 1% of the limit, therefore no project activity instance is identified and divided into clusters during onsite audit hence verified and accepted.
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	the project that would cause any of the clusters to exceed the capacity limit.		
7.	Not be or have been enrolled in another VCS project.	The project proponent will declare that the respective project is not enrolled in any other GHG programs. Hence, the respective project is not enrolled in another VCS project.	New project will be checked for double counting through the declaration provided by the PP and through the secondary internet research. The eligibility condition is found to be appropriate.
8.	Adhere to the clustering and capacity limit requirements for multiple project activity instances as follows: 1. The project proponent shall include in a singular project all project activity instances within ten kilometres of another instance of the same project activity and with the same project proponent 2. 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	New project will adhere to the clustering and capacity limit requirements set out in Section 3.6.8 – 3.6.9 whereby the Project proponent (PP) shall include all project activity instances within ten kilometers of another instance of the same project activity and with the same project proponent and where a capacity limit applies to a project activity included in the project, no project activity instance shall exceed such limit.	New Project under the grouped project activity will be thoroughly checked for adhering to the said requirements for multiple project activity instances set out in the VCS Standard. The eligibility is found to be appropriate.

	exceed the capacity limit, determined as follows: a) Each project activity instance that exceeds one percent of the capacity limit shall be identified. b) Such instances shall be divided into clusters, whereby each cluster is comprised any system of such instances such that each instance is within one kilometer of at least one other instance in the cluster. Instances that are not within one kilometer of any other instance shall not be assigned to clusters.		
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	c) 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.		
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3.2 Participation under Other GHG Programs

In order to receive carbon benefits during the project activity's crediting period, Shri Maa Marketing Private Limited has not registered for, nor is it pursuing registration under, any other GHG emission programme. This was confirmed from the undertaking letter^{4/} and by checking other GHG project registries like CDM⁶, GS⁷, GCC⁸ etc. and found that the project is not claiming any other form of environmental form of credit during then current monitoring period. Thereafter assessment team concluded that project activity is eligible to participate under the VCS Program

3.3 Safeguards

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, there are no greenhouse gas emissions that result due to the project activity, which supports socio-economic and environmental well-being.

⁶ <https://cdm.unfccc.int/contest/Projects/projsearch.html>

⁷ <https://registry.goldstandard.org/projects?q=&page=1>

⁸ <https://projects.globalcarboncouncil.com/>

The assessment team has determined that this complies with the standards of the VCS Standard (version 4.5)^{7(b)} and is therefore acceptable.

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, there are no 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 requirements of the VCS Standard (version 4.5)⁷ and is therefore acceptable.

3.3.2 Local Stakeholder Consultation

The Joint PD & MR⁰¹'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:

Invitation letter sent to local stakeholder and attendees

S. No	Location	Invitation sent on
1.	Acharpura, Bhopal, Madhya Pradesh, India	20/11/2022
2.	Dhabla, Sehore Madhya Pradesh, India	05/12/2022
3.	Bilkisganj, Sehore, Madhya Pradesh, India	09/12/2022
4.	Sehore, Madhya Pradesh, India	02/01/2023
5.	Amjara, Raisen Madhya Pradesh, India	22/11/2022
6.	Jabalpur, Madhya Pradesh, India	22/11/2022
7.	Sagar, Madhya Pradesh, India	22/11/2022
8.	Damoh, Madhya Pradesh, India	03/12/2022

The dates of the Stakeholder Meetings are as follows:

S. No	Location	Meeting Date
1.	Acharpura, Bhopal, Madhya Pradesh, India	20/12/2022
2.	Dhabla, Sehore Madhya Pradesh, India	07/01/2023
3.	Bilkisganj, Sehore, Madhya Pradesh, India	10/01/2023
4.	Sehore, Madhya Pradesh, India	06/02/2023
5.	Amjara, Raisen Madhya Pradesh, India	26/12/2022
6.	Jabalpur, Madhya Pradesh, India	27/12/2022
7.	Sagar, Madhya Pradesh, India	27/12/2022
8.	Damoh, Madhya Pradesh, India	02/01/2023

locals 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 via inviting letters, public notices and through telephonic conversations. The stakeholders were also intimated about the carbon mechanism & its requirement for the current project. After the detailed introductory brief, the session was open for questions from stakeholders. Most of the question from the stakeholders were related to improved cookstoves usage, its impact, benefits from the project to villagers, and other development activities and there were no negative comments and feedback registered during the stakeholder's consultation. There no comments/ suggestion/ recommendations from the stakeholders during the consultation regarding the project design, technology or any other aspects related to the project activity. The question-and-answer evidences for each site during the stakeholder's consultation meeting is submitted by the project proponent which is verified by the assessment team. The invitation procedure specified in the joint PD & MR^{/01/} was determined to be consistent with this claim. 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 register^{/15/} confirms that there were no complaints reported during the current monitoring period till the point of submission of the project activity for validation/verification.

Therefore, the assessment team was able to confirm that the stakeholder meeting was adequate and appropriate.

3.3.3 Environmental Impact

The validation team confirms that EIA is not mandatory as per the legal requirements due to the scale and distribution nature, 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 07/12/2023 to 06/01/2024⁹. During the time for public comment, no comments were received.

3.3.5 AFOLU-Specific Safeguards

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 II – Energy Efficiency Improved Projects

VMR0006 Energy Efficiency and Fuel Switch Measures in Thermal Applications, v1.2

Sectoral scope 3

VCS Methodology: VMR0006 Energy Efficiency and Fuel Switch Measures in Thermal Applications, v1.2 (verra.org)

This methodology also refers to the latest version of AMS II.G version 13.0 - Energy efficiency measures in thermal applications of non-renewable biomass [EB115](#) [repan11 AMS-II.G v13.0 \(unfccc.int\)](#)

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>

3.4.2 Applicability

The project activity uses VMR0006, Version 1.2⁶, of the VCS methodology⁵.

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.

⁹ <https://registry.verra.org/app/projectDetail/VCS/4661>

S. N.	VMR0006, Version 1.2 Requirements	Project activity applicability	Means of verification
1.	This methodology applies to project activities that introduce energy efficiency and fuel switch measures in thermal applications (including cookstoves, ovens, and dryers) that: Increase thermal efficiency to reduce the consumption of non-renewable biomass; or 2) Switch from fossil fuel (coal or kerosene) to renewable biomass in new or existing improved thermal energy generation units.	1) Complies, as the project device (Shri Stove) having thermal efficiency of 34.5% (0.345) which will reduce the consumption of non-renewable biomass 2) Not Applicable, as project activity involves only wood for thermal energy generation.	1) This was verified on the basis of Water boiling test report provided by the PP. 2) During onsite visit, VVB has verified that Project activity involves only wood for thermal generation. Hence this criterion is not applicable.
2.	This methodology is applicable to both 'Projects' and 'Large Projects' under the following conditions: 1) All applicability conditions of the latest version of AMS II.G. must be met. 2) The project activities must be implemented in households, community-based kitchens, institutions (e.g., schools), or small and medium-sized enterprises (SMEs).	1) Complies, and explained below. 2) The project activity is implemented in households	1. VVB observed that, this project fulfils all the applicability criteria of latest version of AMS II G. Hence, this criterion is applicable. 2. Under this project activity cookstoves are distributed for household use and same has been verified during onsite visit by VVB team.

3.	For fuel switch activities, the following additional conditions must be met: 3) Projects must exclusively use renewable biomass and meet the following additional conditions: (a) If biomass residues are used, they have been left for decay or burned without energy recovery before the implementation of the project activity. (b) If biomass residues from a production process are used, the implementation of the project does not result in an increase of the processing capacity of raw input or any other substantial changes (e.g., product change) in this process. (c) If biomass from dedicated plantations is used, the applicability conditions of TOOL16 “Project and leakage emissions from biomass” must be satisfied. 4)The renewable biomass sources must be documented in the project description and monitoring periods, including origin,	Fuel switch is not applicable in the project activity.	VVB has verified that Fuel switch is not applicable in the project activity. Hence, this criterion is not applicable
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	quantities, and pre-project conditions. If the biomass is sourced from a third-party, proof of purchase must be provided (e.g., contractual agreements or purchase receipts).		
	5) More than one type of biomass may be used (e.g., briquettes and wood chips).		

S. N.	AMS II. G Requirement	Project Activity Applicability	Means Of Verification
1.	Applicable to the introduction of single pot or multi pot portable or in-situ cookstoves with rated efficiency of at least 25 per cent.	The single pot improved cookstoves that are deployed in the project boundary have a thermal efficiency of 35.40% as per the manufacturer's specifications and hence the project activity complies to the applicability requirement of the methodology.	This was verified by the stove test certificate issued by credited laboratory MANIT Bhopal, Madhya Pradesh (MANIT is nodal center for energy theme under Indo-UK RECs project in 1994 by Government of India. The center has developed nine laboratories in various specialized area like energy conservation, energy audit solar thermal and PV technology, wind energy, heat transfer systems etc. the same information can be verified through https://www.manit.ac.in/content/energy) Same has been crosschecked online and it was found acceptable to the assessment team. Hence, this criterion is applicable

2	The aggregate energy savings of a single project activity shall not exceed the equivalent of 60 GWh per year or 180 GWh thermal per year in fuel input.	Since the project activity instance has the same model, hence expected annual energy saving for each instance is 0.0064 GWh per year. As per section 2.2 para 4, AMS-II. G, the aggregate energy savings of a single project activity shall not exceed the equivalent of 60 GWh per year in fuel input, which satisfies the condition.	Assessment team confirms that the energy savings meet the specified threshold i.e. annual energy saving for single instance is not exceeding 60 GWh or 180 GWh thermal per year. Based on review of the KPT test and supporting documentation provided by the PP. Hence this criterion is applicable for project activity.
3	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 proof that the use of biomass has been popular since 31 st December 1989 is available through widespread documentations, one of reports by National Sample Survey Organization (NSSO) ¹⁰ shows that 79% of the Indian population were dependent on firewood and chips in the year 1987-88. This clearly shows that the project region, the rural part of India, has been dependent on firewood and other non-	This was verified using literature references presented by PP in Joint PD and MR, & also criteria has been checked based on publicly available literature and reports of Food and Agricultural Organization of United Nation and State of Forest Report 1987. Also, as per Forest Survey report 2011 (In India, Forest survey was happening every 10 years, and this is latest survey report for India. Due to COVID-19, no survey done for year 2021), the demand is more than supply, thus continued use of nonrenewable biomass in India is justified.

¹⁰ https://www.mospi.gov.in/download-reports?main_cat=Nzly&cat=All&sub_category=All

		renewable biomass as a source of thermal energy before and after 1989.	
4	For the specific case of biomass residues processed as a fuel (e.g., briquettes, wood chips), it shall be demonstrated that: (a) It is produced using exclusively renewable biomass (more than one type of 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.	The ICS is being introduced as an energy efficient replacement to the traditional stoves and to also reduce the use of non-renewable biomass.	As the project activity uses non-renewable biomass as a fuel for cookstoves and same has been verified during the onsite visit. Hence, not applicable
5	The CDM-PDD or CDM-PoA-DD/CPA-DD	Every improved cookstove that is	By cross-checking the unique identifiers during the onsite

	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).	distributed with unique serial number. During the distribution, the serial number and the exact location of ICS sold will be recorded in our app. No double counting of emission reductions occurred due to unique identifications of product and end-user location.	inspection against the project documentation, the verification team was able to validate that the self-reported data by the Project proponent was accurately monitored and reported at the individual cookstove level without repetition or inflated figures. Hence this criterion is fulfilled by project activity.
6	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.	The project proponent make sure that no double counting for carbon emission takes place in specified period. All the credit generated from the project is owned by the project proponent, i.e., Shri Maa Marketing Private Limited.	By cross-referencing the cookstove identification numbers and records across the onsite inspection and project documentation, the validation and verification team was able to validate that the emission reductions from each cookstove were appropriately monitored and reported without double counting. Also, the Project proponent also submitted a "no double counting" letter to the VVB team to confirm the cookstove data had not been claimed by any other GHG program. Hence this criterion is fulfilled by project activity.

Applicability of Tool 30: Calculation of the fraction of non-renewable biomass version 04.0;

Applicability Criteria	Means of verification
DNAs to submit region- or country-specific default fNRB values, following the procedures for development, revision,	Complies, calculate fNRB by determining the share of renewable and non-renewable woody biomass in the total quantity of woody biomass

clarification and update of standardized baselines (SB procedures); or Project proponents¹ to calculate project- or PoA-specific fNRB values.	consumption for the project area and compare the calculated values against the values for fNRB reported in relevant scientific literature as mentioned in monitored parameter. Justification: Detailed calculation of fNRB with reference data is mentioned in section 5.4 in accordance with TOOL30, v.04.0, utilizing the latest data sourced from the "Socio-Economic Contribution of Forests: Production and Consumption of Forest Resources in India" and the "Indian Forest Report 2021. As per Tool 30, Version 4, there is a difference in the values of calculated FNrb and the values mentioned in Bailis, R.; Drigo, R.; Ghilardi, A. & Masera, O. (2015) due to the latest data from India. The value of FNrb in Bailis, R.; Drigo, R.; Ghilardi, A. & Masera, O. (2015) is calculated based on data available until 2015, while the recently updated IPCC and India Forest Survey for 2021 provide revised and more current information. The PP used the most recent available data to calculate the FNrb for Madhya Pradesh, India.
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3.4.3 Project Boundary

The project boundary is specified as "the physical, geographical site of the efficient devices that utilize biomass" in accordance with the applicable methodology VMRO006 version 1.2 and CDM methodology AMS II G, version 13.0.

The Joint PD & MR ^{/01/} accurately stated the information pertaining to the project boundary. PP has distributed cook stove in various parts of Madhya Pradesh. As a result, the project boundary for the proposed VCS project activity has taken into account the entirety of Madhya Pradesh.

The VVB team certifies that there are CH₄, N₂O, CO₂ gases and the sources of gases inside the project boundary for the project instances same is reflecting in joint PD&MR, 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 and found acceptable to VVB team.

3.4.4 Baseline Scenario

The grouped project activity, known as the green field activity, entails installing new, improved cookstove systems in homes where, before the project activity was implemented, reliant on firewood was used for their thermal energy needs. During the on-site visit/9/, this was verified. The default scenario calls for increased use of firewood for home thermal energy requirements viz., for cooking purposes. As a result, it adheres to the requirements of the methodology.

The utilization of non-renewable biomass serves as the actual baseline. According to Methodology VMR0006, Version 1.2, "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/charcoal/kerosene).

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 1.2/6/, and it is accepted to be reasonable and justifiable.

The baseline for this project is located in Madhya Pradesh where a similar project has already been implemented (VCS 3769) Accordingly, the baseline for this project is the ongoing use of non-renewable wood fuel in traditional cookstoves or Mud stove fire stove within a specific region. Additionally, a baseline survey is carried out between 03-December-2022 to 31-December-2022 at the project site to ensure the baseline situation. Based on the survey it is confirmed by the PP and verified by the VVB during the onsite assessment interviews with the end users that the traditional cookstoves or Mud stove fire stove were being used in project location.

Detail about the baseline survey:

As per applied methodology, the baseline scenario is the continued use of non-renewable wood fuel firewood by the target population to meet similar thermal energy needs as provided by project cookstoves in absence of project activity. Moreover, as checked by the assessment team from the baseline survey sheet, sample size achieved is 38 by the PP, which is again in line with the sample size calculations, as explained under the section 2.1 of this report.

As confirmed by the assessment team, 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.

3.4.5 Additionality

The project's additionality is shown by how well it adheres to the standards established in VMR0006, Version 1.2/⁶.

Activity Approach

Step 01: Regulatory excess

The distribution of residential fuel-efficient cookstoves is not mandated by any government program 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. Shri Maa Marketing Pvt. Ltd. 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 program. Therefore, the project is additional and voluntary.

Verification team checked the end user agreements and also confirmed from the end users during the on-site audit that the ICS were distributed at free of cost. Team also checked the national and the state 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.

VVB team further verify that, copy of user agreement submit by project developer and it is reviewed during site visit. It conforms that ICS has been distributed free of cost and this was also cross checked and verified during onsite visit interview with the beneficiaries. VVB interviewed the household selected based on sampling basis, during the interview household conformed that, they receive this ICS at zero cost and they did not pay a single penny to the project developer.

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 1.2/6/, are accurately cited. The formulas listed in the applied methodology 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 η_{old} which is 0.127 for this project based on the usage of old traditional cookstoves in the baseline scenario as observed in similar projects of the PP. Also based on the survey it is confirmed that a traditional cookstoves or Mud stove fire stove is being used in project location. This value corresponds with the guidelines stated in VMR0006 Version 1.2, which stipulates that a default value of 0.127 should be used for baseline devices that are either Mud stove 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.

$$ER_y = \sum_i \sum_j B_{y,savings,i,j} \times N_{0,i,j} \times \eta_{y,i,j} \times \mu_y \times f_{NRB,y} \times NCV_{biomass} \times (EF_{wf,CO2} + EF_{wf,non\ CO2}) \times Adj_{LE} \times (1 - u_d) \quad (1)$$

Where:

$ER_y =$	Emission reductions in year y (tCO ₂ e)
$B_{y,savings,i,j}$ =	Quantity of woody biomass that is saved per project device i and batch j in year y (tonnes)
$N_{0,i,j} =$	Number of project devices of type i and batch j commissioned (number)

$n_{y,i,j} =$	Proportion of commissioned project devices of type i and batch j ($N_{0,i,j}$) that remain operating in year y (fraction)
$\mu_y =$	Adjustment to account for any continued use of pre-project devices during the year y
$f_{NRB,y} =$	Fraction of woody biomass that can be established as non-renewable biomass (%)
$NCV_{biomass} =$	Net calorific value of the non-renewable woody biomass that is substituted or reduced (TJ/tonne)
$ud =$	Uncertainty deduction for fnrb (%)
$AdjLE =$	Adjustment factor to account for leakage related to the non-renewable woody biomass saved by the project activity (fraction)
$EF_{wf,CO_2} =$	CO2 emission factor for non-renewable woody biomass (tCO2/TJ)
$EF_{wf,non\ CO_2} =$	Non-CO2 emission factor for non-renewable woody biomass (tCO2e/TJ)

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

Where:

i	Indices for the situation where more than one type of project device is introduced to replace the pre-project devices
j	Indices for the situation where there is more than one batch of project device
ER_y	Emission reductions during year y in t CO ₂ e
$ER_{y,i,j}$	Emission reductions by improved cook stove of type i and batch j during year y in t CO ₂ e
LE_y	Leakage emissions in the year y (tCO ₂ e)

The quantify of woody biomass saved $B_{y,savings,i,j}$ due to implementation of improved cook stoves can be estimated by the following equation:

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

Where:

η_{old}	Efficiency of the old devices being replaced by project devices of type i and batch j (fraction)
$\eta_{new,y,i,j}$	Efficiency of the project device i and batch j (fraction)
$B_{y=1,new,i,j,survey}$	Quantity of woody biomass used by project devices in tonnes per device of type i and batch j (tonnes)

For the scope our project area, following points are considered:

- The project activity distributed 30,000 project devices in the first instance.
- Life span of Improved Cook Stoves is 7 years, as provided by the project device specifications

Calculation 1: Yearly new stove efficiency

As per applied AMS II G v 13.0 “Energy efficiency measures in thermal applications of non-renewable biomass” para 37 (a), A default schedule of linear decrease in efficiency up to the terminal efficiency assumed as 20 per cent shall be applied through the life span of the project device. The thermal efficiency is 35.40 %, after linear decrease of 20 percent it will be 34.30 %.

Output:

Year	$\eta_{new,i,y}$
1	34.30%
2	32.10%
3	29.90%
4	27.70%
5	25.50%
6	23.30%
7	21.10%

Calculation 2: Yearly number of operational stoves

$N_{y,,}$ = Number of stoves in scope x $(1-(y-1) \times \text{loss rate } \%)$

Loss Rate: Annual stove loss rate is estimated at 5%. This is assumed as conservative as

compared with survey results. This value will vary during actual verification based on survey results.

Example of calculation

If $y = 1$, for Project Stove

$$N_y = 30,000 \times [1 - (1-1)5\%]$$

$$= 30,000$$

Outputs:

STOVE OPERATIONAL ((NOij × nyij))	
Year	((NOij × nyij) Number
1	30,000
2	28,500
3	27,075
4	25,721
5	24,435
6	23,213
7	22,053

Calculation 3: Yearly woody biomass saved in tonne per Shri Stove per year

Assumptions:

- Upon initial survey with the households in our project region, it is concluded that Estimated wood biomass consumption in households is ~4.02kg, resulting into $B_{y=1,new}$ to be 1.47/ tonne/stove/ year; assuming stove being operational 365 days
- Efficiency of traditional stoves being replaced – 12.70%

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

Outputs:

Year (y)	$B_{y=1,new,i,survey}$	$\eta_{new,i,y}$	η_{old}	$B_{y,savings,i,j}$
1	1.47	34.30%	12.70%	2.50

2	1.47	32.10%	12.70%	2.24
3	1.47	29.90%	12.70%	1.99
4	1.47	27.70%	12.70%	1.73
5	1.47	25.50%	12.70%	1.48
6	1.47	23.30%	12.70%	1.22
7	1.47	21.10%	12.70%	0.97

Calculation 4: Yearly emission reductions by SHRI STOVE

$$ER_y = \sum_i \sum_j B_{y,savings,i,j} \times N_{0,i,j} \times n_{y,i,j} \times \mu_y \times f_{NRB,y} \times NCV_{biomass} \times (EF_{wf,CO2} + EF_{wf,non\ CO2}) \times Adj_{LE} \times (1 - u_d) \quad (1)$$

Where:

$$f_{NRB,y} = 0.8755$$

NCV_{wood} is 0.0156 TJ/ tonne, as per default value indicated in the (IPCC default value for wood fuel, 0.0156 TJ/tonne

$EF_{wf,2}$ to be 112 tCO₂/TJ and $EF_{wf,non\ CO2}$ to be 9.46 tCO₂/TJ, as per default value indicated in the equation 2, methodology above

Calculation of the fraction of non-renewable biomass

As per equation 3, Tool 30 version 04,

$$H = HW \times N + CE + NE \quad \text{Equation (3)}$$

Where:

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

As per recent report by Socio-Economic Contribution of Forests: Production and consumption of Forests Resource in India, Page 76-77

H	:	38.143	in million tonnes (annually)
$HW \times N$	:	13.665	in million tonnes (annually)
NE	:	24.478	in million tonnes (annually)
CE	:	0	Value Not Available

$MAI_{forest, i}$ and $MAI_{other, i}$ is calculated as per recent report of IPCC, Forest Land, Volume 4,

$$RB = \sum (MAI_{forest, i} \times (F_{forest, i} - P_{forest, i})) + \sum (MAI_{other, i} \times (F_{other, i} - P_{other, i})) \quad \text{Equation (4)}$$

Where:

$MAI_{forest, i}$	=	Mean Annual Increment of woody biomass growth per hectare in sub-category i of forest areas in the relevant period (tonnes/ha/yr)
$MAI_{other, i}$	=	Mean Annual Increment of woody biomass growth per hectare in sub-category i of other land areas in the relevant period (tonnes/ha/yr)
$F_{forest, i}$	=	Extent of forest in sub-category i in the relevant period (ha)
$F_{other, i}$	=	Extent of other land in sub-category i in the relevant period (ha)
$P_{forest, i}$	=	Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within forest areas (in sub-category i) in the relevant period (ha)
$P_{other, i}$	=	Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within other land areas (in sub-category i) in the relevant period (ha)
i	=	Sub-category i of forest areas and other land areas ³

Table-4.9 and Extent of forest is calculated as per Chapter-13 India state of forest report-2021.¹¹

$$f_{NRB} = \frac{NRB}{NRB + RB} \quad \text{Equation (1)}$$

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)

Parameters	Symbol	Description	Value	Unit
Total consumption of woody biomass in the applicable area in the relevant period (tonnes)	H	Calculated	38.14	million tonnes
Quantity of renewable biomass that is available on a sustainable basis in the applicable area in the relevant period (tonnes)	RB	Calculated	4.75	million tonnes
Quantity of non-renewable biomass consumed in the applicable area in the relevant period	NRB	Calculated	33.40	million tonnes
	FNRB		87.55%	

VVB noted that the registered project (VCS 3769¹²) by same PP uses the same fNRVB value and hence found to be appropriate.

¹¹ <https://fsi.nic.in/forest-report-2021-details>

¹² <https://registry.terra.org/app/projectDetail/VCS/3769>

VVB noted that as per requirement of tool 30 version 4.0, the values presented above for fNRB shall be compared with literature, preferably with, Bailis, R.; Drigo, R.; Ghilardi, A. & Masera, O. (2015). The carbon footprint of traditional wood fuels. *Nature Climate Change*, 5(3), pp. 266–272.

PP has prepared a detailed analysis as how and why comparative analysis with the above report is not appropriate for the current project which is presented in appendix 2 of Joint PD&MR. Based on the analysis, VVB noted the following points which affected the calculation of fNRB value and appropriateness of the value considered in the VCS JPDMR:

VVB noted that PP has selected fNRB demonstration on a regional level i. e. state level. This is found appropriate. As per para 3 of tool 30, PP can identify and clearly delineate the applicable area for fNRB. PP has demonstrated in the Joint PD&MR that to assess and use the area from which woody biomass is sourced for end-users included in the project activity, PP has to consider regional (state) specific databases as ecological conditions vary significantly at the subnational level in India, resulting in differences in the mean-annual growth of wood biomass within and outside forested areas. This is acceptable as it also satisfies requirement of par 6 (b) of tool 30 i. e. *“Calculate fNRB by determining the share of renewable and non-renewable woody biomass in the total quantity of woody biomass consumption for the country/region or the project area (hereinafter referred as the applicable area)”*.

The same para mentions that *“The project participants shall compare and analyse the calculated values against the values for fNRB reported in relevant scientific literature and justify any differences. This analysis shall be included in the appropriate section of the PDD”*. PP has demonstrated the comparison with the relevant scientific literature (Bailis, Drigo, & Ghilardi, 2015), referenced in Tool 30 in the appendix 2 of Joint PD&MR. VVB found the PP’s approach correct and VVB noted that the concerned literature does not use the most recent data,

Bailis report^{16/} uses global-level data from the Food and Agriculture Organization (FAO), the International Energy Agency (IEA) and the United Nations (UN) for various data along with other published literature for specific countries and is not state specific data from the local government. E. g. VVB noted that for specific fNRB data for India, Bailis report estimates the NRB values of the region using the WISDOM Model which takes the values of supply and demand module of a given spatial base of the region, and reliance on the local surveys for the same was one of the parameters in the model. However, there was no survey conducted in the project region for the demand of the woodfuel, the Bailis report has referred to the published data of woodfuel consumption for India as per two reference literature as below;

a) Paper titled *“Comparative study of fuelwood consumption by villagers and seasonal “Dhaba owners” in the tourist affected regions of Garhwal Himalaya, India”*. This report refers to wood fuel consumption for “Dhaba owners” i.e., small restaurants in local language. The region of study was tourist affected region of Garhwal which is in Uttarakhand state of India. This paper was published in year 2010 and VVB noted that it is not associated with the project region .

b) Paper titled “Firewood consumption along an altitudinal gradient in mountain villages of India”. This report refers to fuel wood consumption of village households in Uttaranchal state of India. This paper was published in year 2004 and VVB noted that it is not associated with the project region.

Thus, the data used by Bailis report specifically for India is based on a paper of 2004 and 2010 and does not represent the latest data as published by the national agencies as well as regional data available for the project boundary, i.e. for each state within the project boundary. There is considerable difference in the values as published by the national agencies. VVB found that this inference is appropriate

VVB also noted that in section “Discussion and Implementation” on page 4 of Bailis report, it is mentioned that *“One limitation of the study is a lack of reliable wood fuel consumption data. When possible, we used national and sub national data sets. However, for most countries, we relied on data compiled by international organizations containing unknown uncertainties that make it difficult to communicate the uncertainty in these results. A second limitation is that the analysis considers a single year and does not account for potential behavioural changes among wood fuel users”*. Thus, VVB found argument by PP that Bailis report is not a correct representative of the f_{NRB} for the given project boundary, multiple states within India as the report itself has submitted the limitations if faced. Whereas, PP has calculated the value based on the most recent available data for the project region from the government agencies and hence is acceptable to VVB.

PP has further detailed out comparison for each parameter in the appendix 2 of Joint PD&MR with the supporting evidences in the form of reports/weblinks which were assessed by VVB and the comparative account provided proves that the approach selected by PP is the most appropriate.

VVB has noted that there is no other scientific literature available for f_{NRB} value within India for the identified regions available which can be used to compare the value calculated by PP.

PP in the appendix 2 has further presented for countries like Myanmar, Bolivia, Columbia and Guatemala, the f_{NRB} values which are calculated are substantially higher than calculated as per Bailies report. The detailed information presented in the Joint PD&MR was checked and this is found correct by VVB. This further substantiates that though value calculated by PP is on higher side than as per the literature referred by Tool 30 , it is also the case for other countries too.

Further, the data presented by PP in the table for registered project and f_{NRB} values used in the same, demonstrates that PP has used a conservative value of f_{NRB} .

VVB has assessed the presented analysis and accepted that with the most recent data available to PP, use of correct sources for data to be used in the equation and use of renewable biomass/non-renewable biomass, the f_{NRB} value calculated by PP for the current project is appropriate and hence accepted.

EMISSION REDUCTION CALCULATIONS

Year	Biomass Savings	Wood NCV (TJ/Tonnes)	Non-renew Biomass	EF_CO ₂ + EF_nonCO ₂	(1 – <i>ud</i>) Fraction (tCO ₂ /tJ)	Operational Stoves (N _{oij} × n _{yij})	ER
1	2.50	0.0156	0.8755	121.46	0.74	30,000	87,309
2	2.24	0.0156	0.8755	121.46	0.74	28,500	74,495
3	1.99	0.0156	0.8755	121.46	0.74	27,075	62,745
4	1.73	0.0156	0.8755	121.46	0.74	25,721	51,983
5	1.48	0.0156	0.8755	121.46	0.74	24,435	42,141
6	1.22	0.0156	0.8755	121.46	0.74	23,213	33,153
7	0.97	0.0156	0.8755	121.46	0.74	22,053	24,958

Year	Estimated baseline emissions or removals (tCO ₂ e)	Estimated project emissions or removals (tCO ₂ e)	Estimated leakage emissions (tCO ₂ e)	Estimated net GHG emission reductions or removals (tCO ₂ e)
01-January-2023 to 31-December-2023	87,309	0	0	87,309
01-January-2023 to 31-December-2024	74,495	0	0	74,495
01-January-2023 to 31-December-2025	62,745	0	0	62,745
01-January-2023 to 31-December-2026	51,983	0	0	51,983

01-January-2023 to 31-December-2027	42,141	0	0	42,141
01-January-2023 to 31-December-2028	33,153	0	0	33,153
01-January-2023 to 31-December-2029	24,958	0	0	24,958
Total	376,784	0	0	376,784
Total number of crediting years				7 Year
Average annual ERs				53,826

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.

VVB team further verify that, the calculation of the fNRB is found accordance with TOOL30, v.04.0, latest data utilize from the sourced "Socio-Economic Contribution of Forests: Production and Consumption of Forest Resources in India" and the "Indian Forest Report 2021). The values are found consistent with Joint PD&MR, thus accepted by VVB team.

3.4.7 Methodology Deviations

Not Applicable as no methodology deviation has been applied.

3.4.8 Monitoring Plan

The project uses VCS methodology, specifically VMR0006, Version 1.2, and in accordance with that approach, the following parameters will be monitored ex-post:

Parameters kept ex-ante:

1. NCV_{wood fuel}: Net calorific value of the non-renewable woody biomass that is substituted or reduced.

This parameter is a default value as per the applied methodology VMR0006, version 1.2. PP has used default value as 0.0156 TJ/tonne which is correct.

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

The value of the parameter is calculated by PP using tool 30, version 4.0 using the most recent data available from the host country. The assessment of the value calculated is provided above in section 3.4.6 and the value was confirmed. The considered value i. e. 87.55% is appropriate and is fixed ex-ante for the 1st crediting period.

3. EF_{WF, CO_2} : CO₂ emission factor for the use of wood fuel in baseline scenario

VVB has checked that PP has used a default value i. e. 112 tCO₂/TJ as per the applied methodology – VMR006 version 1.2 which has used this value based on the 2006 IPCC guidelines and is found acceptable.

4. $EF_{WF, non-CO_2}$: Non-CO₂ emission factor for the use of wood fuel in baseline scenario

VVB has checked that PP has used a default value i. e. 9.46 tCO₂/TJ as per the applied methodology – VMR006 version 1.2 which has used this value based on the 2006 IPCC guidelines and is found acceptable.

5. η_{old} – Efficiency of baseline cookstove

VVB checked and confirmed that PP had appointed a 3rd party to check the efficiency of baseline stove at different locations within the project boundary. The result of this assessment conducted by an accredited laboratory - Maulana Azad National Institute of Technology (MANIT) following national or international standards were checked by VVB to confirm that the value of 0.0926 is appropriate as in line with the steps mentioned under section 9.2¹³ of applied methodology

6. U_d : Uncertainty deduction for f_{NRB}

PP has calculated f_{NRB} value as per tool 30, version 4.0. Hence as per the methodology requirement, PP has used value as 26% i. e. option 2) as mentioned in the methodology which is correct.

7. η_p : Efficiency of project stove at the start of project activity

¹³ As per meth: "Water Boiling Test (WBT): a minimum of three project devices with three tests per device must be conducted by a third-party (manufacturer or accredited laboratory)."

VVB has checked and confirmed that PP has used the value i. e. 35.40% which is based on the manufacturer's specifications which were established based on test conducted at an accredited laboratory - Maulana Azad National Institute of Technology (MANIT) following national or international standards.

8. Adj_{LE} : Adjustment factor to account for leakage related to the non-renewable woody biomass saved by the project activity

VVB noted that PP has used the value as 0.95 which is in line with the requirements mentioned in the applicable CDM methodology - AMS-II.G v13, section 5.4 and hence accepted.

VVB noted that all these values are fixed for the 1st crediting period which is appropriate.

Parameters to be monitored are:

Parameter (s)	Units	Frequency	Description	Source of monitoring data	Means of verification
$N_{y,i,j}$	Number	Biennially (at least once in two years)	Number of project devices of type i and age a that are operating in year y	Survey of a representative sample.	VVB noted that PP will conduct survey to measure and confirm the no. of commissioned project devices (i.e. project activity instances). This is found acceptable as it is in line with the applied CDM methodology
$NO_{i,j}$	Tonnes	Biennially (at least once in two years)	i Number of project devices of type i and batch j operating during year y	Based on monitoring survey.	VVB noted that PP will conduct biennial survey to measure and confirm the proportion of commissioned project devices (i.e. project activity instances). This is found acceptable as it is in line with the applied CDM methodology
$By_{=1, new, I, j, survey}$	Tones	Determined in the 1 st year of implementation	Annual quantity of wood biomass used by improved cookstoves in tones per device of type i and batch j, determined in the	Based on the monitoring data	VVB noted that the value of the parameter will be established by PP in the 1 st year of project implementation which is found acceptable.

			first year of the implementation of the project through a sample survey		
$\eta_{new,i,j}$	Fraction	Annual	As per para 37 of AMS II G: A default schedule of linear decrease in efficiency up to the terminal efficiency assumed as 20 per cent shall be applied through the life span of the project device ,2.2 % of linear decrease in efficiency is applied	standards body or an appropriate certifying agent recognized by that body	VVB noted that this parameter will be monitored on the annual basis and as per equation mentioned in para 37 of AMS II G: A default schedule of linear decrease in efficiency up to the terminal efficiency assumed as 20 per cent will be applied throughout the life span of the project device which is acceptable. PP has provided the efficiency values in decreasing order in the VCS PDMR and ER sheet which were checked and found correct.
Date of commissioning of batch j	Date	Not applicable	Fixed and recorded at the time of commissioning / distribution of the project device over all 30,000 cookstove distributed.	Project Database	VVB noted that the value of the parameter will be established based on the project ICS database and the date of commissioning of ICS i. e. start of emission reductions will be recorded which is appropriate.
μ_y	Fraction	At least once in 2 years	Adjustment to account for any continued use of pre-project devices during the year y.	Monitoring survey	VVB noted that this parameter will be established based on the monitoring survey to be conducted which is acceptable.
Life Span	Number of years	Once at the time of installation of batch of type of stove	The operating lifetime of the project device. The life span should be	Manufacturer specification	VVB noted that the life span is determined based on manufacturer's specification which were submitted to VVB and checked to confirm the

			reported if the methodology equation 5 is adopted to determine the project stove efficiency.		value.
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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/}

All data will be electronically archived and maintained for 2-year post issuance.

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):

SI 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	For Madhya Pradesh – 87.55% (0.875) (calculated as per meth tool)	%	Fraction of non-renewable biomass is calculated as per the fNRB calculation TOOL30: Calculation of the fraction of non-renewable biomass/14/ in ER sheet tab “fNRB”/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, Gol, 2019)/24/. 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	Default as per applied approved methodology VMR0006 v1.2
3.	EF _{wf,CO2}	CO2 emission factor for the use of wood fuel in baseline scenario	112	tCO2/TJ	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion/23/
4.	EF _{wf,non CO2}	Non-CO emission factor for the use of wood fuel in baseline scenario	9.46	tCO2/TJ	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion
5.	η_{old}	The efficiency of baseline cookstove	0.127	Fraction	Measured value as per VMR0006 version 1.2 in conjunction with AMS II G v13.0.
6.	U _d	Uncertainty deduction for fNRB	0.26	Fraction	Methodology default value
7.	Adj _{LE}	Adjustment factor to account for leakage	0.95	Fraction	In-line with the applied methodologyAs per

		related to the non-renewable woody biomass saved by the project activity			section 5.4 of AMS-II. G v13.0
8.	η p	Efficiency of the project stove at the start of project activity	0.354	Fraction	Manufacturer's specification third party verified

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	Means of verification
1.	1.4	1.4.1 Proportion of population below the international poverty line	30,000 households who got high-energy efficient project improved cookstoves saved fuelwood and cooking time, thereby reducing fuelwood monthly expenses, and providing extra time for alternate jobs.	VVB has checked the project databased submitted which confirmed that total 30,000 ICS were distributed.
2.	3.9	3.9.1 Mortality rate from air pollution	Around 30,000 household, with an average of two people per household, were able to enjoy improved indoor air quality due to the use of improved cookstoves. These cookstoves reduced the emission of fine particulate matter during cooking, resulting in better health and wellbeing for the people using them.	During on-site interviews with the end users of ICS, they confirmed that the air pollution is reduced and hence SDG parameter 3.9.1 is confirmed.
3.	5.4	5.4.1 Time spent on unpaid domestic and care work, by sex, age & location	Distributed ICS to reduce drudgery, and time spent by women/girls in 30,000 households on cooking or care work. We considered at an average of 1hr/day default factor, per household	During on-site interviews with the end users of ICS, they confirmed that time spent for firewood collection is reduced and

			was reduced in rural areas.	hence SDG parameter 5.4..1 is confirmed.
4.	7.1	7.1.2-Proportion of population with primary reliance on clean fuels and technology.	The project has resulted in increased reliance on clean technology through distribution of 30,000 numbers of improved cookstoves.	VVB has checked the project databased submitted which confirmed that total 30,000 ICS were distributed.
5.	8.3	8.3.1 Proportion of informal employment in non-agriculture employment, by sex	The project provides training to 35 individuals who are employed to manage project activities. This initiative not only increases employment opportunities in rural areas but also equips these individuals with the skills to secure jobs in the future.	During on-site interview, VVB has confirmed that 150 individuals were trained on the basis of training records submitted.
6.	13	13.2.1 Quantity of emission reductions achieved from the project activity.	The emission reduction achieved during the monitoring period is 61,146 tCO ₂ e.	The submitted ER sheet was checked the accuracy of data, parameters and equations used to confirm that emission reduction calculation is correct

Parameter(s) monitored ex-post:

Parameter	Ny,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 frequency	/Reading /Recording	At least once every two years. For current monitoring period it is measured through survey 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	30,000 The value is checked and confirmed based on sample survey submitted for the 1 st year of operation.
	How were the values in the monitoring report verified?	Measured directly or based on a 90/10-representative sample. PD has used sampling guideline, version 4.0 to determine the sample size to achieve 90/10 confidence precision. From each state, PP has randomly selected the ICS applying random sampling function in excel and accordingly the target ICS sample is determined for survey. Data collected: Questionnaire survey form used by third party surveyor and a detailed survey report has been provided. Since the relative margin of error obtained is less than 10% for the monitored parameter, relative precision of the data is statistically acceptable and deemed representative of the population. The submitted survey was checked and confirmed.
	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 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	$\eta(\text{new}, i, j)$ The efficiency of the improved cook stove type i and batch j determined as per equation 5 of methodology during year y	
Means of verification		
	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	PP has decided to measure the efficiency once at the time of project cookstove installation at the start of installation which is appropriate.
	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. It will be monitored at time of each new cookstove installation which is acceptable.
	Monitoring equipment	As per the applied methodology AMS.II.G para 37 was possible to measure the efficiency ex-ante. However, the grouped project may add a different type of cook stove during its operational life time and hence PD has decided to measure this parameter ex-post which is acceptable
	Value applied	34.30%
	How were the values in the monitoring report verified?	Efficiency test carried out by third party who is authorized by government. PD has submitted efficiency test report by IIT Delhi, Government of India which was checked for the value and was found correct. Further, in line with equation 5, PD has decided to apply efficiency loss per year which is 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 assessment of the project activity confirms that the necessary QA/QC procedures are in place and the data management system is effective and reliable.
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	$B_{y=1, \text{new}, i, j, \text{survey}}$: 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
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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 prior to fuel measurement, which was pre-calibrated and acceptable. The weighing scale will be calibrated annually. .
	Value applied	For the project boundary (Madhya Pradesh, state of India) 1.650 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 as per Sampling and surveys for CDM project activities and programmes of activities, ver 9. 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 that rural communities have limited awareness of carbon emission, economic constraints faced by low- income households, quality and longevity of traditional cook stove and with in-person interview found that households typically use 8-9 Kilogram of wood for their cooking practices.

		Hence found correct by assessment team.
	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 confirms that the necessary QA/QC procedures are in place and the data management system is effective and reliable.
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	(N _{0,i,j}) Number of commissioned project devices of type i and batch j	
Means of verification		
	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	Not applicable
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	No
	Monitoring equipment	-
	Value applied	The value is checked and confirmed based on sample survey submitted.
	How were the values in the monitoring report verified?	Fixed and recorded at the time of distribution of project device
	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 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	Measured directly or based on a representative sample. Sampling standard shall be used for determining the sample size to achieve 90/10 confidence precision according to the latest version of Standard for sampling and surveys for CDM project activities and program of activities.	

Parameter	(Uy) Adjustment to account for any continued use of pre-project devices during the year y	
Means of verification		
	Criteria/Requirements	Assessment/Observation
	Measuring /Reading /Recording frequency	At least once in 2 years
	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.
	Monitoring equipment	Monitoring survey report
	Value applied	1
	How were the values in the monitoring report verified?	Fixed and recorded at the time of distribution of project device
Findings	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	A 95 /10 confidence / margin of error shall be achieved for the sampling parameter irrespective of annual / biennial monitoring frequency as per para 22 of Standard: Sampling and surveys for CDM project activities and program of activities, Version 09.0. In the case the desired precision is not met, lower bound values shall be used against repeating the survey to determine the operational fraction of stoves.
	No findings were raised.	
Conclusion	The baseline stoves are decommissioned during the distribution of the project devices. However, regular monitoring will be conducted by the field team to check the regular usage and the grievances related to the project devices.	

Parameter	Life Span (The operating lifetime of the project device. The life span should be reported if the methodology equation 5 is adopted to determine the project stove efficiency)	
Means of verification		
	Criteria/Requirements	Assessment/Observation

	Measuring frequency /Reading /Recording	Once at the time of installation of batch of type of stove
	Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
	Monitoring equipment	Not Applicable
	Value applied	7
	How were the values in the monitoring report verified?	Fixed and recorded at the time of distribution of project device
	Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Not Applicable
Findings	No findings were raised.	
Conclusion	The cookstoves will be replaced with new ones at the end of technical lifespan of the cookstove. However, in case of any damages, the stoves will be checked and repaired/ replaced based on the severity of the damage.	

The Joint PD & MR formulae for calculating emission reductions, as certified by the used methodology VMR0006 Version 1.2 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 1.2 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 01-January-2023 to 30-September-2023 (inclusive of both the dates) PD has achieved to reduce 61,146 tCO₂e 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 ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
01-January-2023 to 30-September-2023	61,146	0	0	61,146
Total	61,146	-	-	61,146

4.2 Quality of Evidence to Determine GHG Emission Reductions and Removals

Review of ER sheet (ex-ante and ex-post) reveals that the comparison of actual GHG emission reductions with those in PD estimates:

Details and steps taken by the assessment team related to the sufficiency of quantity, and appropriateness of quality, of the evidences to verify the monitoring parameters are mentioned under section 4.1 of this report. Assessment team has checked the calculation for the determination of the emission reductions and found them correct and accurate and assessment team confirms the sufficiency of quantity, and appropriateness of quality, of the evidence used to determine the GHG reductions and removals for this verification period.

The VVB team noted that the sampling is done to obtain an unbiased and reliable estimating and monitoring of the parameters (such as $B_{y=1, new, i, j, survey}$). The PP has informed that 90/10 is the chosen confidence/precision for the parameters. This confidence/precision is same as prescribed in the applied methodology (90/10). The same is described in section 6.3 of the VCS PDMR. The VVB team confirms that the sampling method is clearly described in line with the description of the population and that the sampling plan transparently describes how the samples are selected. Validation team confirms that the overall monitoring plan complies with the requirements of the methodology VMR0006; the monitoring arrangements described in the monitoring plan are feasible within the project design and the project proponents will be able to implement the described monitoring plan.

VVB team verified that, all the necessary documentations are collected, referenced and aggregated, which is easily accessible in hard-copy, Measurements are performed by calibrated equipment, and the key data can also be cross-checked via other sources, such as records, receipts. No assumptions are used that have any material influence on reported emission reductions. VVB team concludes that during this monitoring period, the evidences for determination of emission reductions are sufficient and reasonable, and the calculation of emission reductions is reliable.

5 VALIDATION AND VERIFICATION OPINION

Shri Maa Marketing Pvt. Ltd. hired LGAI Technological Center, S.A. (also known as Applus+ Certification), to carry out a joint validation and verification of the VCS project activity "SMG – COOKSTOVE PROGRAM 20."

The VCS Standard (version 4.5), VCS Program Guide (version 4.4), and Registration & Issuance Process (version 4.4)^{/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, Version 1.2^{/6/}, and according to Applus+ Certification, delivers the information in Joint PD & MR as needed by VCS Standard, version 4.5^{/7(b) /}. As previously mentioned, the validation was carried out utilizing a risk-based methodology. The project activity is anticipated to reduce emissions by 376,784 tCO₂e 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 "SMG – COOKSTOVE PROGRAM 20" complies with all the applicable VCS requirements, including those outlined in the CDM Project Standard, version 3.0, methodologies, tools, and guidelines.

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 process of joint validation and verification is conducted according to the VCS Joint PD MR, which includes supplementary documents concerning baseline and monitoring methodologies. This process also involves background investigations, on-site visits, and the provision of supporting documents by the project proponent to the assessment team. The management of 'Shri Maa Marketing Pvt. Ltd.' bears the responsibility for preparing the GHG emissions data and reporting GHG emissions reductions in alignment with the guidelines outlined in the project's final Joint PD Monitoring Report. The calculation and determination of GHG emission reductions resulting from the project are also within the purview of the management of 'Shri Maa Marketing Pvt. Ltd.'. Furthermore, the establishment and upkeep of records and reporting procedures adhere to the specifications detailed in the final Joint PD Monitoring Report. VVB team verified that, the data & the information provided in GHG statement assertion is projected. All the assumption are based on the available supporting document & third-party reports or the mentioned in appendix 2, Since the estimates are based on assumption that are subject to change. Thus, VVB conclude that project likely to achieve estimated emission reduction, project emission describe below

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 01-January-2023 to 30-September-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 is:

Year	Estimated GHG emission reductions or removals (tCO ₂ e)
Year 1: (01-January-2023 to 31-December-2023)	87,309
Year 2: (01-January-2024 to 31-December-2024)	74,495
Year 3: (01-January-2025 to 31-December-2025)	62,745
Year 4: (01-January-2026 to 31-December-2026)	51,983
Year 5: (01-January-2027 to 31-December-2027)	42,141
Year 6: (01-January-2028 to 31-December-2028)	33,153
Year 7: (01-January-2029 to 31-December-2029)	24,958
Total estimated ERs	376,784
Total number of crediting years	7
Average annual ERs	53,826

Year	Baseline emissions or removals (tCO2e)	Project emissions or removals (tCO2e)	Leakage emissions (tCO2e)	Net GHG emission reductions or removals (tCO2e)
01-January-2023 to 30-September-2023	61,146	0	0	61,146
Total	61,146	-	-	61,146

Year	Ex-ante emissions reductions/removals	Achieved emissions reductions/removals	Percent difference	Justification for the difference
01-January-2023 to 30-September-2023	64,532	61,146	-5.54	All the project ICS were not installed on the first date of monitoring
Total	64,532	61,146	-5.54	

APPENDIX 1: DOCUMENT REFERENCES

No.	Author	Title	References to the document	Provider
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1.	PP	Joint PD & MR (Initial) Joint PD&MR (Final)	Version 01 dated 03-February-2023 Version 1.5 dated 17-September-2024	PP
2.	PP	Emission reduction spreadsheet (Initial) Estimated Emission reduction spreadsheet (Final)	Version 01 dated 03-February-2023 Version 1.5 dated 17-September-2024	PP
3.	NA	ICS Distribution data and carbon waiver records of ICS	-	PP
4.	PP	Declaration(s) from Project proponent on double accounting	12-May-2023	PP
5.	NA	Efficiency certificate of ICS issued by MANIT Bhopal	01-August-2022	PP
6.	NA	VMR0006 Methodology for Installation of High Efficiency Firewood Cookstoves V.1.2 AMS II G v13.0	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 4.4; b) Verified Carbon Standard, version 4.5; c) VCS Program Definitions, version 4.4 d) VCS Registration and Issuance Process, version 4.4 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	-	PP
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	Dated 15-December-2022	PP
13.	PP	ICS Survey Report	-	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	Sampling and surveys for CDM project activities and programmes of activities, version 09.0	https://cdm.unfccc.int/filestorage/e/x/t/extfile-20210531160756474-Meth_Stan05.pdf/Meth_Stan05.pdf?t=a0h8cmjY2hufDB3trwzZ7tid7mL2VQB0SR	UNFCCC CDM page
19	TERI	Rural Energy data sources and estimations in India – TERI	https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.581.9840&rep=rep1&type=pdf	-
20	FSI	State of Forest Report 2011	https://fsi.nic.in/cover_2011/chapter7.pdf	FSI
21	FAO	Regional Wood Energy Development Programme In Asia GCP/RAS/154/NET, RWEDP Report No49, The Wood Fuel Scenario and Policy issues in India. Published by the FAO Regional Wood Energy Development Programme in Asia, Bangkok, Thailand	https://wgbis.ces.iisc.ac.in/energy/HC270799/RWEDP/acrobat/fd49.pdf	FAO
22	MoEF, Govt. of India UN Data	State of Forest Report 1987 Used Non-renewable biomass has been used since 31 December 1989	http://data.un.org/Data.aspx?d=EDATA&f=cmID%3aFW	-
23	IPCC	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion	https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_1_Ch1_Introduction.pdf	IPCC
24	Forest Survey of India	State of Forest report (Forest Survey of India Ministry of Environment, Forest & Climate Change, GoI, 2019).	https://fsi.nic.in/forest-report-2019	FSI

APPENDIX 2: ABBREVIATIONS

Abbreviations	Full texts
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)
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
VVB	Validation and Verification Body
VVS	Validation and Verification Standard

APPENDIX 3: FINDINGS OVERVIEW

Table 1.CL from this validation / verification

CL ID	01	Section no.	4.1	Date: 01-February-2024
Description of CL				
During review estimate sheet it has been observed that Efficiency of Old cookstove (η_{old}) is taken for only Jabalpur district however survey report consists of 3 more districts. Clarification sought.				
Project participant response				Date: 05-February-2024
The baseline efficiency test (water boiling test) was conducted for this project in project boundary and jabalpur district cover under project boundary. Thus as per VMR0006 Energy Efficiency and Fuel Switch Measures in Thermal Applications, v1.2 as per Water Boiling Test (WBT) specified in applied methodology				
Documentation provided by Project proponent				
Baseline efficiency Certificate test				
VVB assessment				Date: 08-February-2024
Water Boiling Test (WBT) test has conducted for Jabalpur district provided in estimated ER sheet, they have submitted the revised doc for the document to VVB team and now efficiency is clear to assessment team, thus CL is closed.				

CL ID	02	Section no.	3.2.2	Date: 01-February-2024
Description of CL				
PP has provided detailed information related to local stakeholder consultation under section 2.2 of the submitted PD-MR. However, evidence to verify the same is yet to be submitted.				
Project proponent response				Date: 05-February-2024
PP shared the details of local stakeholder consultation including local stakeholder involvement, date of meeting and outcomes.				
Documentation provided by Project proponent				
Local consultation report				
VVB assessment				Date: 08-February-2024
The VVB has assessed the LSC report submitted by the PP. The photographs of the LSC meeting, attendance sheets and a sample feedback form in the LSC report were found to be OK. Hence, CL 02 is closed.				

CL ID	03	Section no.	4.2	Date: 01-February-2024
Description of CL				
1. PP shall submit supporting documents for the monitored parameters as mentioned under section 6.2 of the submitted PD-MR. 2. PP shall submit supporting documents for SDG indicators achieved during current monitoring period as explained in section 1.17 of PD&MR.				
Project proponent response				Date: 05-February-2024

1. PP submitted supporting documents for the monitored parameters including survey conducted on field, wood saving and thermal efficiency of project device and baseline stove. 2. PP submitted i) employment list of individuals benefitted in project activity along with their feedback for SDG 8.3 to VVB ii) A monitoring survey for 3.9 And 5.4 SDG iii) distribution database for SDG 7.1 iv) ER calculation sheet for SDG 13 v) Monitoring survey concluding the saving of expenses in wood fuel for SDG 1.4. to VVB as a supporting document for training of SMG field team.	
Documentation provided by Project proponent	
1. Employment sheet 2. monitoring survey and Baseline excel Survey sheet 3. ER calculation sheet 4. Baseline document	
VVB assessment	Date: 08-February-2024
PP submitted supporting documents for a. Monitoring Excel report for monitored parameters including survey conducted on field, wood saving b. thermal efficiency test certificate for baseline stove. c. Manufacturer specification containing thermal efficiency test certificate of project device. CL 03 is closed.	

CL ID	04	Section no.	3.2	Date: 01-February-2024
Description of CL				
PP requested to submit declaration in effect of avoiding double counting with regard to Participation under other GHG Programs/Other forms credits. Further, information on participation in REC mechanism of India or international is not clear. Correction sought. PP shall submit baseline survey detailed results as well as complete monitoring survey database.				
Project proponent response				Date: 05-February-2024
PP submitted the declaration in effect of avoiding double counting with regard to Participation under other GHG Programs/Other forms credits. PP submitted the baseline survey detailed results as well as monitoring survey database				
Documentation provided by Project proponent				
monitoring survey database and baseline survey				
VVB assessment				Date: 08-February-2024
The VVB has assessed the LSC report submitted by the PP. The photographs of the LSC meeting, attendance sheets and a sample feedback form in the LSC report were found to be acceptable. Hence, CL 04 is closed.				

CL ID	05	Section no.	3.1	Date :01-February-2024
Description of CL				

In section 1.1 of the submitted report, PP mentioned “one instance of the project activity is scheduled to include the delivery of 30,000 ICS. This number is subject to change during implementation and will be updated. Average annual GHG emission reduction from the first project activity instance is 87,233 tCO₂e and 388,178 tCO₂e respectively.” Average PP to clarify the values of estimated annual average and total reduction in line with estimate ER sheet.

Project proponent response
Date : 05-February-2024

In section 1.1 of the submitted report, Average estimated annual GHG emission reduction and total estimated annual GHG emission reduction is 53,826 tCO₂e and 376,784 tCO₂e respectively. Is updated as per Ex Ante calculation sheet shared with VVB.

Documentation provided by Project proponent

Revised PDMR

VVB assessment
Date: 08-February-2024

PP has revised the values in the revised PDMR which were checked and are matching with the ex-ante emission reduction worksheet and hence accepted. Hence this part of CL is closed.

CL 05 is closed.

CL ID	06	Section no.	4.1	Date :01-February-2024
Description of CL				
PP to submit the following documents:				
1. First User agreement 2. Stove beneficiary agreement 3. Stove specifications 4. Stove Thermal efficiency report 5. f_{NRB} calculation sheet				
Project proponent response				Date : 05-February-2024
PP submitted following documents:				
1. First User agreement 2. Stove beneficiary agreement 3. Stove specifications including Stove Thermal efficiency report 4. f_{NRB} calculation sheet				
Documentation provided by Project proponent				
1. First User agreement 2. Stove beneficiary agreement 3. Stove specifications including Stove Thermal efficiency report 4. f_{NRB} calculation sheet				
VVB assessment				Date: 08-February-2024
1. First user agreement is not found in the submitted documents. 2. A blank copy of agreement is submitted which was checked and found acceptable. 3. PP has submitted stove specifications including stove thermal efficiency report by accredited agency - Maulana Azad National Institute of Technology, Bhopa, India. The same is found acceptable. 4. PP has submitted f_{NRB} calculation sheet which was checked and found acceptable. 5. PP also shared water boiling test report copies.				
CL 07 is closed.				

CL ID	07	Section no.	1.1	Date: 08-February-2024
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Description of CL	
1. It is not clear how many projects ICS that shall be distributed/ installed per household. Please clarify. Also, kindly clarify the basis of its determination. 2. PP to clearly mention ICS name throughout PDMR for better clarity. 3. In section 1.12, PP has mentioned 'traditional stoves' which shall be elaborated to explain the type of stove used in the baseline and baseline fuel.	
Project proponent response	Date: 31- December -2023
1. Only one project device is distributed per household, and it was inspected by the field team. The field representative assessed the household conditions and identified those meeting the criteria. They distributed the project device while recording the beneficiary's unique government ID and household details. The same information has been shared with the VVB. 2. PP mentioned ICS name "Shri Stove" throughout Joint PDMR 3. The term "traditional stoves," as referenced by PP, pertains to mud stoves. This clarification is explicitly outlined in the Joint PDMR and baseline documents. Further elaboration in these documents will provide detailed explanations regarding the specific type of stove utilized in the baseline assessment, as well as information on the corresponding baseline fuel.	
Documentation provided by Project proponent	
1. Joint PDMR 2. Technical specification 3. Baseline Document	
VVB assessment	Date: 08-February-2024
1. PP response is accepted and same was confirmed during the on-site visit. Hence this part of CL is closed. 2. The name of Shri Stove revised throughout the joint PDMR and thus PP response is accepted. 3. PP response is accepted.	
CL 08 is closed.	

CL ID	08	Section no.	1.5	Date: 01-February-2024
Description of CL				
Clarification is requested about the reference source for the applicability criteria mentioned under section 1.5 of the Joint PDMR.				
Project proponent response				Date: 05-February-2024
Clarification of the applicability criteria is mentioned in the Joint PDMR with justification and relevant documents are already shared with VVB including efficiency of project devices, distribution database and capacity limit.				
Documentation provided by Project proponent				
Joint PDMR				
VVB assessment				Date: 08-February-2024
Section 1.5 of joint PDMR has been updated now found acceptable to VVB team. Thus, CL 09 is closed.				

CL ID	09	Section no.	4.1	Date: 01-February-2024
Description of CL				
Section 1.12 of submitted PDMR mentions, "These households considered as end users of project devices, are not being able to afford cook stoves and are also least interested in investment as plenty of firewood is available for free" whereas section 1.14 mentions "The baseline surveys revealed that all respondents were dissatisfied with their current stoves and expressed interest in receiving an energy efficient cookstove". Kindly clarify.				
Project proponent response				Date: 05-February-2024

The information provided during the baseline survey indicates that households expressed an inability to afford improved cook stoves due to income constraints. However, they demonstrated a willingness to use the improved cookstove (referred to as the project device) if provided free of cost. Notably, households mentioned the availability of abundant free firewood from nearby farms and forest areas.

In Section 1.11 of the baseline report shared with VVB, it is highlighted that all respondents were dissatisfied with their current stoves due to issues such as increased smoke and higher fuel requirements. Furthermore, the respondents expressed a desire to transition from their baseline stoves to the project stove, especially if provided free of cost. This information provides insights into the community's perspective and preferences regarding the adoption of the project stove.

Documentation provided by Project proponent

Baseline Document

Joint PDMR

VVB assessment

Date: 08-February-2024

PP response is found satisfactory and is acceptable. **CL 10 is closed.**

Table 2.CAR from this validation / verification

CAR ID	01	Section no.	3.1	Date:	01-February-2024
Description of CAR					
The PD-MR shall update all section in joint PD&MR as the latest VCS template version 4.3 guideline. Hence corrective action sought.					
Project proponent response					Date: 05-February-2024
Joint PD&MR is updated as per revised template.					
Documentation provided by Project proponent					
Joint PD&MR is updated as per revised template.					
VVB assessment					Date: 08- February -2023
Revised Joint PD&MR was checked and observed that PP has applied the latest version, version 4.2, of the VCS Joint PD&MR template. The section now filled as per the requirements of the latest template. Hence, CAR 01 is Closed.					

CAR ID	02	Section no.	4.1	Date:	01-February-2024
Description of CAR					
PP shall correct the following inconsistencies observed in the submitted Joint PDMR. 1. PP is not clear about the type of fuel. Since the wood and woody biomass are two different things. 2. Crediting period mentioned in section 1.10 of PD MR found less than 7 years found not inline with VCS standard requirement. Thus, corrective action sought.					
Project proponent response					Date: 05-February-2024
1. PP updated the information in PDMR regarding the type of fuel and made it consistent throughout the PDMR. 2. Crediting period updated in section 1.10 of PD MR and made in line with VCS standard requirement.					
Documentation provided by Project proponent					
Joint PDMR					
VVB assessment					Date: 08-February-2024

- 1.. PP updated the information in PDMR regarding the type of fuel and made it consistent throughout the PDMR
2. Crediting period mentioned in section 1.10 of PD MR found correct with VCS standard requirement.

Thus, CAR 02 is closed.

CAR ID	03	Section no.	3.1	Date :01-February-2024
Description of CAR				
1. PP to justify the alignment throughout the submitted joint PD&MR, correction is sought. 2. PP to make the consistency of font and font size throughout the submitted report. Correction is required.				
Project proponent response				Date : 05-February-2024
1. PP justified the alignment throughout the submitted joint PD&MR 2. PP made consistency of font and font size throughout the submitted report				
Documentation provided by Project proponent				
Joint PD&MR				
VVB assessment				Date : 08-February-2024
1. Revised PDMR was checked and found appropriate for the alignment. Hence this part of CAR is closed. 2. Revised PDMR was checked and found appropriate for the font used and font size. Hence this part of CAR is closed.				
Thus, CAR 03 is closed.				

CAR ID	04	Section no.	3.4	Date :01-February-2024
Description of CAR				
1. PP has mentioned tool 30 version 3.0 in section 3.1 of the submitted report. However, PP to use the latest version of the tool. Correction is required. 2. In section 3.2 of the submitted report PP mentioned the applied methodology is VMR0006 version 1.2 titled 'Methodology for installation of high efficiency firewood cookstoves'. However, the title of the applied methodology version 1.2 is 'Energy efficiency and fuel switch measures in thermal application'. Correction is sought. 3. In section 5.4 of the joint PD&MR PP has mentioned the formula with respect to applied methodology VMR0006 version 1.2, However, the description of the parameters is not consistent with the latest version of the methodology. Correction is sought.				
Project proponent response				Date : 05-February-2024
1. Tool 30 version 4.0 is used to calculate the values of Fnrb and information along with version is updated in entire joint PDMR 2. The conditions of applicability aligned with the applied version of the methodology in section 3.2 of the joint PD&MR. 3. Section 5.4 of the joint PD&MR is updated.				
Documentation provided by Project proponent				
Joint PD&MR				
VVB assessment				Date : 08-February-2024
1. Revised PDMR was checked to confirm that version 4.0 of tool 30 is now mentioned. Hence this part of CAR is closed. 2. Revised PDMR was checked and it was noted that section 3.1 now correctly mentions the methodology name. Hence this part of CAR is closed. 3. Section 5.4 of joint PD&MR is now corrected according to new applied methodology VMR0006 version 1.2. Thus, acceptable VVB team.				
CAR 04 is closed.				

CAR ID	05	Section no.	4.2	Date :01-February-2024
Description of CAR				
During review of estimated ER sheet VVB team observed following. 1. Value mentioned for Stove Loss $_{ny,l,j}$ does not found in mentioned source of data. 2. Source of Ny calculation is sourced from which document please clarify. 3. Estimated net generation values are found not rounded down. Corrective action sought.				
Project proponent response				Date : 05-February-2024
1. Explanation of the parameter and calculation of Stove Loss $_{ny,l,j}$ is mentioned in the Ex Ante sheet. 2. Ny is sourced from distribution database and for being conservative in estimation of emission PP assumed the linear stove loss rate. The calculation of the same is shared with the VVB in Ex ante sheet. 3. Values now has been rounded down.				
Documentation provided by Project proponent				
Ex ante ER sheet.				
VVB assessment				Date : 08-February-2024
PP has reviewed the revised documents and found values has been revied for below points. 1. Value mentioned for Stove Loss $_{ny, l,j}$ now updated 2. Source of Ny calculated from distribution database and for being conservative found acceptable 3. Estimated net generation values are now rounded down in estimate ER sheet. Thus, CAR 05 is closed.				

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	Shrivastava	Ishan	TQC-Outsourced entity	Yes	Yes	Yes	Yes
2.	Auditor-in-Trainee & Technical Expert in Trainee	OR	Singh	Anjali	TQC-Outsourced entity	Yes	Yes	Yes	Yes
3	Observer	OR	Shubham	Kumar	TQC-Outsourced entity	Yes	Yes	Yes	Yes
4	Observer	OR	Umardand	Adesh	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	Shen	Simon	Applus+ Certification
2.	Approver	IR	Calle de Miguel	Agustin	Applus+ Certification

Short CVs of the Team:

Name	Short CV Background Information
Mr. Ishan Shrivastava	Mr. Ishan Shrivastava, has done bachelor of engineering in Mechanical Engineering from Rajiv Gandhi Proudhyogiki 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 as Auditor (Validator/Verifier) for Validation and Verifications of Project Activities (Renewable and non- renewable projects) under CDM/VCS/GS4GG/GCC programs. Mr. Ishan Shrivastava is based in Indore, India. Mr.

	Ishan Shrivastava participates as part of the Audit Team as Lead Auditor & Technical Expert for the assessment.
Ms. Anjali Singh	Anjali Singh holds a Bachelor of Engineering degree in Electronic and Communication Engineering from Rajiv Gandhi Proudhyogiki Vishwavidyalaya, India. She has one year of experience as a Graduate Engineer Trainee at Idea Cellular Limited, India. She has also worked for three years as an Assistant Engineer at Gargee Energies, India, where she was involved in solar rooftop project design and consulting, as well as operation and maintenance activities. Currently, Anjali is working at True Quality Certifications Pvt. Ltd. She has been working there since 2021 and the company is an outsource entity for LGAI Technological Center, S.A. (Spain) "Applus+ Certification". At True Quality Certifications, Anjali supports audit teams for verifications of project activities for renewable and non-renewable projects under the Clean Development Mechanism (CDM), Verified Carbon Standard (VCS), and Gold Standard for Global Goals (GS4GG) programs. She is qualified Technical Expert in Scetorial Scope 1.2 (Energy Industries (Renewable / Non-Renewable Sources))
Mr. Kumar Shubham	Mr. Kumar Shubham has completed an Integrated M.Tech in Energy Engineering from the Central University of Jharkhand in 2021. His research interests and experience include working on biomass-derived anode materials for sodium-ion batteries and participating in a research-based training program at IIT Guwahati where he worked on solar simulators, engine testing with biofuels, and solar PV waste management. He also gained project-based training at Jindal Steel and Power in energy saving. His research findings have been published in the Journal of Energy Storage. He is based in Indore and is participating as an observer in the project team.
Mr. Adesh Umardan	Mr. Adesh Umardand is a highly skilled professional with a strong background in sustainable environmental management. With a PGDM in Sustainable Environmental Management from SIES Institute, Mumbai, and a Bachelor's Degree in Environmental Engineering, he brings a comprehensive understanding of environmental principles and practices. With over 3 years of experience in the field of environment consulting, Mr. Adesh has developed expertise in various areas, including water and wastewater treatment, solid waste management, and Indian and US environmental compliance. His professional portfolio showcases his ability to oversee projects from design drawing to erection and commissioning of all types of waste treatment plants. He has also demonstrated proficiency in plastic and e-waste recycling, obtaining waste management consents for different organizations, and managing alternate fuels and raw materials for industries. Currently associated with True Quality Certifications Private Limited and empanelled with Applus+ Certification for GHG audits, Mr. Adesh Umardand has actively participated as an observer in assessments.
Mr. Simon Shen	Mr. Simon Shen (Master Degree in Thermal Energy Engineering, Bachelor Degree in Environmental Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project assessment, auditing and technical review. He has more than 6 years of work experience in CDM/GS4GG/VCS project assessment and review with Applus+, apart from the years of experience working as GHG Auditor and ISO 9001/14001 in TUV SUD for 3.5 years before he joined Applus+. Mr. Simon Shen has extensive experience also as former

	Applus+ Shanghai CDM Technical Manager. Mr. Simon Shen is based in Shanghai, China. Mr. Simon Shen participates in the project's technical review team.
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