GLOBAL COOKSTOVE PROGRAM (EKI PHASE 12

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Project Title	Global Cookstove Program (EKI Phase 12)
Report Title	Global Cookstove Program (EKI Phase 12)
Version	03
Report ID	TQC 12123
Verification Period	22-January-2023 to 30-April-2023
Client	EKI Energy Services Limited
Pages	64
Date of Issue	09-July-2024
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Summary:

LGAI Technological Center (hereinafter referred to as Applus+ Certification) is contracted by M/s EKI Energy Services Limited to conduct the joint validation and verification of the project "Global Cookstove Program (EKI Phase 12)", VCS ID 3031[1] against VCS standard version 4.4/7(b)/

The project's design description, baseline, monitoring plan, and compliance with applicable VCS and host party criteria are all confirmed as part of the joint validation and verification process. The monitoring plan of the Joint PD and MR (Project ID 3031) 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 1.1/6/ of the methodology. A site visit was performed to confirm the information provide by PP/9/.

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

The first crediting period's expected annual average emission reductions over a seven-year period are 74,807 tCO_2e/year and 523,651 tCO_2e will be reduced during the course of the seven years of the crediting period. During the 1st monitoring period from 22-January-2023 to 30-April-2023 (inclusive of both the dates), 15,754 tCO_2e GHG emissions were reduced.

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

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

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

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

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

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

This joint validation and verification has been carried out using a risk-based methodology. 05 Corrective Action Requests (CARs) and 03 Clarification Requests (CRs) were raised during joint validation and verification and successfully closed. FAR was not raised for the current period.

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

Our view refers to the projects' claimed GHG emissions, GHG emission reductions as a result, and to the project's legitimate baseline, monitoring, and supporting papers. Based on the information viewed and assessed, we confirm that the project activity " Global Cookstove Program (EKI Phase 12)" reduced emissions by 15,754 tCO_2e from 22-January-2023 to 30-April-2023, including both the days.

CONTENTS

1 INTRODUCTION

1.1 Objective

Applus+ Certification has been contracted by M/s EKI Energy Services Limited (project proponent), to undertake the joint validation and verification of the project titled "Global Cookstove Program (EKI Phase 12)". The assessment team have reviewed the GHG data collected for the monitoring period from 22-January-2023 to 30-April-2023(both days included) covered in this verification. The objective of the joint validation and verification is to have an independent third-party assessment of the Joint PD & MR/1/ and supporting documentation to ensure compliance with the rules, regulations and guidelines by VCS requirements. In particular;

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

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

1.2 Scope and Criteria

For Validation:

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

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

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

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

For Verification:

The scope of the verification was the independent and objective review and ex-post determination of the monitored reductions in GHG emissions from "Global Cookstove Program (EKI Phase 12)". The verification of this project was based on the validated VCS joint project description & monitoring report and supporting documents submitted by the project proponent to the verification team. The documents were reviewed against the following guidance and protocols:

- VCS Program Guide (v4.3)/7(a)/
- VCS Standard (v4.4)/7(b)/
- VCS Program Definitions (v4.3)/7(c)/
- VCS Registration & Issuance Process (v4.3)/7(d)/
- VCS approved methodology VMR0006 (version 1.1, dated 22/07/2021)/6/

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

1.3 Reasonableness of Assumptions and Level of Assurance

The 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 complete monitoring data for all the parameters of the monitoring plan 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, states of India. As the target populations are unable to afford these stoves (ICS), project promoters have distributed ICS free of cost.

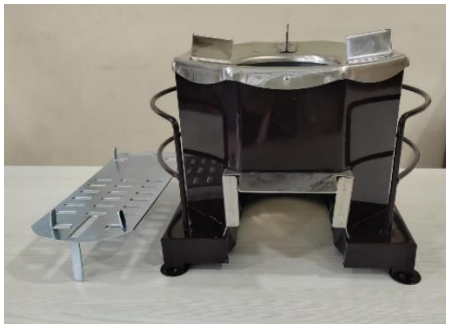
The end-user has been informed in advance that the use of ICS generates carbon finance which in turn is used to cover the price of ICS and for recovering project implementation costs. EKI identified the potential locations where the majority of the population is using the traditional cookstoves, based on previous experiences in other projects, or available information or baseline survey, for the distribution of improved cookstoves. EKI prioritized the appointment of a local implementation partner for the delivery of ICS and local men's and women's teams were deployed and trained for the implementation of ICS. 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, states of India and may expand further to other parts of India. EKI has distributed 18,000 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 22-January-2023 under this grouped project activity. 18,000 project activity instances (ICS) have been implemented as a part of this project activity.

VVB team verified that, project activity is grouped project including distribution of 18,000 ICS (one improved cookstove (ICS) is considered as one instance under the project activity) in Chhindwara district of Madhya Pradesh, India, project activity is not a de-bundled component as the beneficiary or users of the ICS are different in different project activity and the project boundary of the registered project activity is not within 1 km of the project boundary of the proposed grouped project activity.

VVB team would like to conform that, each ICS is being assigned with a unique serial number. This number is recorded during the registration process. Project proponent had submitted the beneficiary details and same is found during the site visit and document review, Thus VVB team verified that, this project activity is not a debundled component of a larger grouped project or program and separate unique ID of each ICS make it distinguished from other distributed ICS.

TECHNICAL DETAILS			
A)	Cook Stove Type/Category	AGNEEKAA ECO MINI STOVE MODEL4 SE 	
		Natural Draft	
B)	Secondary Air Supply	Through Natural Draft	
C)	Stove Material Used	Body	Galvanized Iron Sheet
		Body Material Thickness	0.6mm
		Combustion Chamber	Stainless Steel SS 202 grade
		Combustion Chamber Material Thickness	1 mm SS 202/201 2B grade
		Insulating Material	Ceramic Thermal Wool
		Insulating Material Thickness	6 to 8mm
		Top Plate	Stainless Steel SS 202/201 Mat/ Mirror grade
		Top Plate Material Thickness	1 mm
D)	Physical Structure	External Dimension	Length: - 260mm
			Width: - 260mm
			Height: - 248mm
		Combustion Chamber Dimension	Diameter: - 125mm
E)	Grate Thickness	2 mm Material HR sheet	
F)	Weight Of the Stove	3.8 Kg	

G)	Type of Fuel Wood	Firewood 30 to 50 mm diameter	
H)	Feeding Process	Continuous Feeding Front Loading	
I)	Expected life of the stove	7 Years	
J)	Guarantee /Warranty Period	1 Year	
K)	Box Dimension	Outer Side Box Dimension	Length: - 300mm
			Width: - 300mm
			Height: - 270mm
L)	Thermal Efficiency	36.42% Thermal efficiency is determined by the Indian Institute of Technology Delhi[2]	

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 74,807 tCO_2e per year and 523,651 tCO_2e over the course of the seven-year crediting period.

For current first monitoring period from 22-January-2023 to 30-April-2023, the project has reduced 15,754 tCO_2e of GHG emissions.

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

2 VALIDATION AND VERIFICATION PROCESS

2.1 Method and Criteria

[2] refer to Appendix 4

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

The 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 three phases;

- A desk review of the Joint PD and MR.
- A physical site visit and follow-up interviews with project stakeholders.
- Findings were raised and resolved.
- The resolution of outstanding issues and issuance of the final report and opinion.

Since the project requires sampling, based on the provisions of CDM Standard: Sampling and surveys for CDM project activities and programmes of activities, version 9.0/23/, 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 8 randomised households from each state for acceptance surveying based on PP's database. The households were chosen from the 125 (Madhya Pradesh), households already surveyed by the CME/PD. 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 is 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 Sie (n)	Acceptance Number (c)	Sample Size (n)	Acceptance Number (c)	Sample Sie (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%	
AQL	UQL	Sample Sie (n)	Acceptance Number (c)	Sample Sie (n)	Acceptance Number (c)	Sample Sie (n)	Acceptance Number (c)	Sample Sie (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
0.5	**20%**	22	1	18	1	9	0	**8**	**0**

The identified 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 on 8 Sample

Name	Village	Tehsil	District	State
Madhya Pradesh				
Maya Barmaiya	Rohana	Chhindwara	Chhindwara	Madhya Pradesh State of India
Hemwati Vishwakarma	Thuniya Udana	Chhindwara	Chhindwara	
Seeta Khalote	Thuniya Udana	Chhindwara	Chhindwara	
Aarti Bandewar	Bhaisadand	Chhindwara	Chhindwara	
Siya Kumre	Lakdi Jhamodi	Amarwara	Chhindwara	
Gita Markam	Jamuniya	Amarwara	Chhindwara	
Parvati Prajapati	Jamuniya	Amarwara	Chhindwara	
Soanli Pal	Tuniya Udana	Chhindwara	Chhindwara	

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? Three-stone fire, Self-built low efficient clay stove, Traditional low efficient stove or Others. If others, the type and number of stoves are
   c. What kind of fuel did you use for the stove(s)? Charcoal, Firewood, or Others. If others, the kind of fuel is
   d. Do you think the Cookstove will generate smokes and cause respiratory or itching issues?
3. Project cookstoves using situation
   a. Are you the main user of the Project Cookstove at home?
   b. When did you buy the Project Cookstove?
   c. Do you know you have waived ownership of ERs before used the Cookstove?
   d. What document do you sign or what information do you provide when you were distributed the Project Cookstove?
   e. When did you start using the Project Cookstove?

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

2.2 Document Review

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

2.3 Interviews

The assessment team visited the site between 01-May-2023 to 02-May-2023, PP representatives and end users were questioned. The table includes information on the interviewees from PP side. ICS Users interviewed List is mentioned in the section 2.1 of this document.

Sr. No.	Name	Role	Organization
1	Mr. Pavan Patel	Stove Distributer	Aransh Agro
2	Mr. Soumitra Kulkarni	Manufacturing	GHG Reduction Technologies Pvt LTD
3	Mr. Surva Majumdar	Project consultant	EKI Energy Services 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

Total 8 sample were visited as part of the site visit.

The assessment team visited the site between 01-May-2023 to 02-May-2023 to perform the following tasks:

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

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

2.5 Resolution of Findings

The goal of this step is to identify, discuss, and draw conclusions about any problems that may affect the project activity's ability to reduce emissions or have an impact on the recording, monitoring, and reporting of those reductions. These problems may be related to the project description, technical specifications, baseline and additionality, monitoring parameters and monitoring plans, implementation status, or operations of the project activity. Based on the desk review and site evaluation, this was carried out. The assessment team creates and/or maintains a validation and verification procedures (internal document) that documents conformities and non-conformities, which may include the following kinds of issues:

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

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

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

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

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

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

Clarification request (CL) is raised if:

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

Forward Action Requests (FARs) is raised if:

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

05 Corrective Action Requests (CARs) and 03 Clarification Requests (CLs) were raised and successfully closed during the current joint validation and verification.

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

2.5.1 Forward Action Requests

The project activity is undergoing Joint Validation and Verification under VCS, and 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 22-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 74,807 tCO2e and 523,651 tCO2e over the seven-year crediting period, which runs from 22-January-2023 to 21-January-2030 (inclusive of both the dates).

Details of the PP

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

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

Oher entities involved in the project is as follows:

Organization name	Aransh Agro
Role in the project	Distributor
Contact person	Pavan Patel
Title	Owner/ Partner
Address	Plot No. 392, Tripuri Ward garh, Jabalpur, MP
Telephone	8821930305
Email	aranshgroup@gmail.com

Organization name	GHG Reduction Technologies Pvt LTD
Role in the project	Manufacturing

Contact person	Mr. Soumitra Kulkarni
Title	Director
Address	A-11/2/3, Nagargoje Industries PVT LTD, SUmmet Compound Ambad, Nashik Maharashtra – 422010
Telephone	+91 982287213
Email	Soumitra.kulkarni@enkingint.org

VVB team verified the details of the other entities with the help of the Agreement between Project proponent & other entities involved in the distribution of the ICS which was submitted by the PP and found to be error free and Hence, accepted by VVB team.

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 PP (EKI energy Services 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.

Assessment 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 assessment team

The project will reduce 15,754 tCO2e GHG emissions during the first monitoring period, which is from 22-January-2023 to 30-April-2023 (inclusive of both the dates).

Each ICS will reduce emissions by approximately 4.87 tCO2e in Madhya Pradesh, (based on total emissions projected by the total number of cookstoves), according to the computation in the section (net of leakage and continued use of the baseline stoves). The project proponent has commissioned 18,000 ICS during current monitoring period as confirmed based on ICS database.

The current initiative is a voluntary endeavour by the project proponent because there is no mandatory rule or regulation in the host country – India mandating the implementation of ICS. 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 India. For the first instance PP stoves are distributed in the state of Madhya Pradesh. 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 GHG registry. Same declaration mentions that the project is not registered/seeking registration in any 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 form 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. Thus, avoiding double counting. Same has been confirmed by the Assessment team by checking REC registry.

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 ERs 74,807 is not more than 300,000t CO2 hence project is not a large scale.

Baseline scenario:

The baseline scenario that existed prior to the implementation of the project activity instances involves the use of conventional biomass fuel and inefficient cook stoves which use more firewood and are with poor ventilation, which causes excessive indoor air pollution (IAP) and poses a serious health risk to women and children who spend a lot of time in the kitchen.

The baseline for this project is located in the same area where a similar project has already been implemented. Accordingly, the baseline for this project is the ongoing use of non-renewable wood fuel in traditional cookstoves or three-stone fire stove within a specific region. 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 three-stone fire stove is being used in project location.

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.

Assessment team further confirmed that;

Project activities are implemented in domestic premises;

The project stoves have high-power thermal efficiency of 36.42% as confirmed based on the manufacturer's specifications provided ICS exclusively use woody biomass (fuel wood) and are single pot;

Since 31/12/1989, non-renewable biomass has been used in India, according to secondary research 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 GHG programme.

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 3.2 below, where the target of the end-user is household and the ICS deployed is at least 25% of thermal efficiency.	PP has distributed ICS with an efficiency of 36.42% and since each ICS is treated as a new instance. Hence applicable and accepted
2	Use the technologies or measures specified in the project description.	The technology used for the project activity is energy-efficient cookstoves. Only energy efficient cook stoves are to be adopted in the project by replacing traditional cookstoves in households.	PP has distributed only one model of ICS which is energy efficient (verified from 3rd 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 3rd party testing report) Hence applicable and accepted.

4	Are subject to the baseline scenario determined in the project description for the specified project activity and geographic area.	The new project activity instances will be installed within India subject to the same baseline scenario determined in Section 3.4 below.	All the cookstoves are distributed within India. Hence applicable and accepted.
5	Have characteristics with respect to additionality that are consistent with the initial instances for the specified project activity and geographic area.	All new project activity instances will use the activity method for demonstration of additionality. Step 1: Regulatory Surplus There is no mandated government programme or policy in the host country of this project ensuring the distribution of new energy efficient cook stoves for each project activity instance. Step 2: Positive List The inclusion of new project activity instances will comply with the positive list as it satisfies criterion 1 where it meets all the applicability conditions of the methodology.	Since each instance is within India and there is no mandated government programme in host country for distribution of cookstove. Hence accepted and Applicable. The inclusion of new project activity instances complies with the positive list as it satisfies criterion 1 where it meets all the applicability conditions of the methodology.

6	Where a capacity limit applies to a project activity included in the project, no project activity instance shall exceed such limit. Further, no single cluster of project activity instances shall exceed the capacity limit, determined as follows: Each project activity instance that exceeds one percent of the capacity limit shall be identified. Such instances shall be divided into clusters, whereby each cluster is comprised of any system of instances such that each instance is within one kilometer of at least one other instance in the cluster. Instances that are not within one kilometer of any other instance shall not be assigned to clusters. None of the clusters shall exceed the capacity limit and no further project activity instances shall be added to the project that would cause any of the clusters to exceed the capacity limit.	No project activity instance shall exceed the applicable limit, which is 180 GWh_{th}/y. Since the project activity instances installed to date and proposed to be installed have/will have the same model, hence expected annual energy saving for each instance is less than 0.0121 GWh_{th}/y which is less than 0.01% of the threshold limit. As the annual energy saving is below 1% of the limit, therefore no project activity instance is identified and divided into clusters.	Since the project activity instances I have the same model and expected annual energy saving for each instance is less than 0.0121 GWh_{th}/y which is less than 0.01% of the threshold limit. As the annual energy saving is below 1% of the limit, therefore no project activity instance is identified and divided into clusters hence verified and accepted.

3.2 Participation under Other GHG Programs

In order to receive carbon benefits during the project activity's crediting period, EKI Energy Services Limited has not registered for, nor is it pursuing registration under, any other GHG emission programme. This was confirmed from the undertaking letter/4/ and by checking other GHG project registries like CDM, GS, GCC etc. VVB has also checked the REC registry and found that the project is not claiming any other form of environmental form of credit during then current monitoring period. Thereafter approved.

3.3 Safeguards

3.3.1 No Net Harm

The proposed project activity has not noted any potential detrimental effects on the environment or society. Because clean technology of cook stoves is installed and used, 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 standards of the VCS Standard (version 4.4)/7(b)/ and is therefore acceptable.

3.3.2 Local Stakeholder Consultation

The Joint PD & MR/01/'s section 2.2 contains a detailed explanation of the local stakeholder consultation process conducted. Stakeholders were defined as individuals who are impacted by project activities and those whose actions directly or indirectly affect the project.
The stakeholder consultation meeting details are as follows:
The dates of the Stakeholder Meetings are as follows:
Date of invitation – 22-December-2022
Date of Meeting – 22-January-2023
Location of Meeting – Rohankala, Chhindwara, Madhya Pradesh

School teachers, vendors, farmers, representatives from neighbourhood NGOs, and 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. 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 registry/15/ confirms that there were no complaints reported during the current monitoring period.

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 16-May-2022 to 15-June-2022[3]. 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: Type II – Energy Efficiency Improved Projects

[3] Verra Search Page

VCS Methodology: VMR0006: Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.1
Sectoral scope 3
https://verra.org/wp-content/uploads/2021/07/VMR0006-Methodology-for-Installation-of-High-Efficiency-Firewood-Cookstoves-v1.1.pdf
This methodology also refers to the latest version of AMS II.G version 12 - Energy efficiency measures in thermal applications of non-renewable biomass
https://cdm.unfccc.int/methodologies/DB/GNFWB3Y6GM4WPXFRR2SXKS9XR908I0
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 1.1/6/, of the VCS methodology[4].

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.

S. N.	VMR0006, Version 1.1 Requirements	Project activity applicability	Means of verification
1.	Project activities shall be implemented in domestic premises or in community-based kitchen	The proposed project involves deployment of ICS only in households.	This was verified by the monitoring survey conducted by an independent third party during the annual ICS users' survey/13/
2.	The project stove shall have specified high power thermal efficiency of at least 25% per the manufacturer's specifications and shall exclusively use woody biomass (fuel wood) and can be single pot or multi-pot;	Energy Efficient stoves planned to be installed under this project are single-pot portable cook stoves that have an efficiency of more than 25%. For all project activity instances, ICS with an efficiency of 36.42% is planned to be installed. For future project activity	This was verified by the stove test certificate issued by credited laboratory (IIT Delhi) and submitted to the VVB for validation/5/

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

S. N.	VMR0006, Version 1.1 Requirements	Project activity applicability	Means of verification
		instances, the manufacturer may change, and the cook stove efficiency that should be more than 25% as mentioned in the methodology based on manufacturer specification.	
	Both 'Projects' and 'Large Projects' can use the methodology	Estimated average annual emission reductions for the grouped project activity are lower than 300,000 tonnes of CO_2e per year. Therefore, the proposed project qualifies for the "Projects" criteria.	Same is verified by the assessment team from the emission reduction sheet and Joint PD and MR which is found correct Hence accepted.
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 non-renewable biomass has been used in the country since 31st Dec 1989. The information was derived from the literature survey	This was verified using literature references presented by PP in Joint PD and MR

S. N.	VMR0006, Version 1.1 Requirements	Project activity applicability	Means of verification
4	For the specific case of biomass residues processed as a fuel (e.g. briquettes, wood chips) (a) It is produced using exclusively renewable biomass (more than one type of biomass may be used). (b) The consumption of the fuel should be monitored during the crediting period and (c) Energy use for renewable biomass processing (e.g. shredding and compacting in the case of briquetting) may be considered as equivalent to the upstream emissions associated with the processing of the displaced fossil fuel and hence disregarded.	Not applicable. The ICS is introduced as energy efficiency measure to replace baseline stoves and reduce the use of non-renewable biomass for combustion.	Not applicable.
5	Monitoring approaches for $B_{savings,i,j}$and values for parameters f_{NRB} (when Option (a) in paragraph 48(c) is chosen) and the quantity of woody biomass (fuel wood) $B_{old,i,j}$ may be determined	Not applicable. The ICS is introduced as energy efficiency measure to replace baseline stoves and reduce the use of non-renewable biomass for combustion.	Not applicable.

S. N.	AMS II G Version 12 Requirements	Project activity applicability	Means of verification
1	The VCS PD shall explain the proposed method for	Each ICS in this project can be identified by a unique combination of	This information verified from

S. N.	AMS II G Version 12 Requirements	Project activity applicability	Means of verification
	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).	customer name and geographical location, as well as a serial number. The serial number is a unique number which allows for a clear distinction between the stoves. No individual serial number can be repeated within the project, thus ensuring that each stove is counted only once in the proposed project. In addition, the project has been cross-checked against other CDM project activity operating in the country using the UNFCCC, the Gold Standard, and other relevant voluntary carbon schemes to ensure that the ICS is not included in any other CDM project activity or voluntary project activity	distribution records, ICS database and carbon waiver records.
2	The CDM-PDD or CDM-PoA-DD/CPA-DD shall also explain how the proposed procedures prevent double counting of emission reductions, for example to avoid that project stove manufacturers, wholesale providers or others claim credit for emission reductions from the project devices.	Manufacturers/ cook stove distributors undertaking is provided that EKI is the owner of that carbon credits and Manufacturers/ cook stove distributors will not claim any credits for such cook stoves	This information verified from declaration for the carbon waiver.

Applicability of Tool 30 : Calculation of the fraction of non-renewable biomass (version 04)

Applicability criterion	How the project complies

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

3.4.3 Project Boundary

The project boundary is specified as "the physical, geographical site of the efficient devices that utilise biomass" in accordance with the applicable methodology VMR0006 version 1.1 and CDM methodology AMS II G, version 12.

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

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

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

3.4.4 Baseline Scenario

The project activity, known as the green field activity, entails installing new, improved cookstove systems in homes where, before the project activity was implemented, firewood was used for thermal energy requirements. 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 utilisation of non-renewable biomass serves as the actual baseline. According to Methodology VMR0006, Version 1.1, "The baseline scenario is the continuous use of non-renewable wood fuel by the target community to meet identical thermal energy needs as provided by project cookstoves in the absence of project activity" (firewood/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 1.1/6/, and it is accepted to be reasonable and justifiable.

The baseline for this project is located in the same area where a similar project has already been implemented. Accordingly, the baseline for this project is the ongoing use of non-renewable wood fuel in traditional cookstoves or three-stone fire stove within a specific region. Additionally, a baseline survey is carried out 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 three-stone fire stove were being used in project location.

3.4.5 Additionality

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

Activity Approach

Step 01: Regulatory excess

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

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

Step 02: Positive List

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

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

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

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

national and the sated governments schemes portal to verify that the project is not implemented as a part of any government scheme. Based on the aforementioned data, the Validation Team draws the conclusion that the data in the joint PD and MR complies with methodology requirements.

3.4.6 Quantification of GHG Emission Reductions and Removals

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

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

PP has applied a value of η_{old} which is 0.1 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 three-stone fire stove is being used in project location. This value corresponds with the guidelines stated in VMR0006 Version 1.1, which stipulates that a default value of 0.1 should be used for baseline devices that are either three-stone fires utilizing firewood (not charcoal), or conventional devices lacking an improved combustion air supply or flue gas ventilation and without a grate or chimney. Same has been assessed and found correct and conservative by the assessment team.

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

$$ER_y = \sum_i \sum_j ER_{y,i,j}$$ Equation (2)

Where:

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

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

ER_y = Emission reductions during year *y* in tCO_2e

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

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

Where

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

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

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

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

Where

η_{old} = Efficiency of baseline cookstove

$\eta_{new,y,i,j}$ = Efficiency of the improved cookstove type *i* and batch *j* determined through water boiling test (WBT) during year *y*

Alternatively, efficiency may be determined using Equation 4.

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

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

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

1) Installed 18,000 ICSs.

2) The life span of each ICS is 7 years; thus, the operational lifetime of each project activity instance is taken as 7 years.

3) Annual stove loss rate is estimated at 5%. This is assumed for estimation. During actual ER calculation, this value may change. This value is determined during actual verification based on survey results.

4) $B_{y=1,\ new,i,\ survey}$, is assumed as

   - Madhya Pradesh – 3.1458 kg/device/day or equal to 1.1482 tonnes/device/year.

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

Determination of F_{nrb} value:

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

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

Where:

f_{NRB}	=	Fraction of non-renewable biomass in the applicable area in the relevant period (fraction or %)
NRB	=	Quantity of non-renewable biomass consumed in the applicable area in the relevant period (tonnes)
RB	=	Quantity of renewable biomass that is available on a sustainable basis in the applicable area in the relevant period (tonnes)

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

NRB = H – RB

Where:

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

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

H = HW × N + CE + NE

Where:

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

As the parameters HW and N, disaggregated value is not provided, hence we will be using an aggregated value of (H × N) in the calculations.

	HW × N (million tonnes)	CE (Million tonnes)	NE (Million tonnes)	**H (Million tonnes)**
Madhya Pradesh	13.67	1.494	0	**15.1593**

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

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

Where:

$MAI_{forest,i}$	=	Mean Annual Increment of woody biomass (fuel wood) growth per hectare in sub-category i of forest areas in the relevant period (tonnes/ha/yr)
$MAI_{other,i}$	=	Mean Annual Increment of woody biomass (fuel wood) growth per hectare in sub-category i of other land areas in the relevant period (tonnes/ha/yr)
$F_{forest,i}$	=	Extent of forest in sub-category i in the relevant period (ha)

$F_{other,i}$ = Extent of other land in sub-category i in the relevant period (ha)

$P_{forest,i}$ = Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within forest areas (in sub-category i) in the relevant period (h

$P_{other,i}$ = Extent of non-accessible area (e.g. protected area where extraction of wood is prohibited, geographically remote area) within forest areas (in sub-category i) in the relevant period (ha)

$MAI_{forest,I}$ = 0.33 tonnes/hectare/year[5]

$MAI_{other,I}$ = 0.32 tonnes/hectare/year[6]

	$MAI_{forest,i}$	$MAI_{other,i}$	$F_{forest,i}$ (Million Ha)	$P_{forest,i}$(Million Ha)[7]	$F_{other,i}$(Million Ha)	**RB (million tonne)**
Madhya Pradesh	0.33	0.32	6.477	3.578	2.077	**1.616**

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

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

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

Where

η_p	=	Efficiency of project stove (fraction) at the start of project activity.
$(DF_n)^{y-1}$	=	Discount factor to account for efficiency loss of project cookstove per year of operation (fraction). This value may be based on actual monitoring or based on

[5] https://www.forests.tn.gov.in/app/webroot/img/Yield%20table%20for%20few%20tree%20species%20grown%20in%20farm%20settings.pdf

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

[7] [7] https://fsi.nic.in/isfr-2021/chapter-13.pdf

		manufacturer's declaration on expected loss in efficiency or through publicly available literature on relevant industry standards. Alternatively default value of 0.99 efficiency loss per year can be considered.
0.94	=	Adjustment factor to account for uncertainty related to project cookstove efficiency test.

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

5) Installed 18,000 ICSs.

6) The life span of each ICS is 7 years; thus, the operational lifetime of each project activity instance is taken as 7 years.

7) Annual stove loss rate is estimated at 5%. This is assumed for estimation. During actual ER calculation, this value may change. This value are determined during actual verification based on survey results.

8) $B_{y=1,\ new,i,\ survey}$, is assumed as

- 3.1458 kg/device/day or equal to 1.1482 tonnes/device/year.

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

Determination of efficiency of ICS during year y

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

Where

η_p = 36.42%

DF_n = 0.99

Example of calculation:

If y= 1

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

= 34.23%

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

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

7	32.23%

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

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

Example of calculation for Madhya Pradesh:

If y= 1,

$B_{y,savings,i,j}$= 1.482 X [(0.3423/0.1) -1]

= 2.7827 tonnes

Year (y)	$B_{y=1,new,i,survey}$	$\eta_{new,y,i,j}$	η_{old}	$B_{y,savings,i,j}$
1	*1.1482*	*34.23%*	0.1	*2.7827*
2	*1.1482*	*33.89%*	0.1	*2.7434*
3	*1.1482*	*33.55%*	0.1	*2.7045*
4	*1.1482*	*33.22%*	0.1	*2.6659*
5	*1.1482*	*32.89%*	0.1	*2.6278*
6	*1.1482*	*32.56%*	0.1	*2.5900*
7	*1.1482*	*32.23%*	0.1	*2.5526*

Approach of Estimating fNRB

In accordance to the referred literature recent maps of land cover and ecological zones are being assigned an AGB stock using three types of sources 1) AGB distribution maps, 2) geo-referenced field plots, and 3) forest inventories from known locations for specific forest types where AGB distribution was derived from different datasets. To accommodate disagreements in the datasets, woody components not typically used for wood fuels (twigs, leaves, and stumps), to build a map of "Dendro-energy" biomass (DEB) stock are subtracted. The wood fuel supply is then estimated as the "mean annual increment" (MAI) of DEB, which is modeled via a functional relationship between ~2,800 spatially explicit field observations of MAI and corresponding AGB. Land cover change is accommodated by estimating the amount of DEB produced by deforestation and afforestation processes based on data from FAO using data from Forest Monitoring for Action (FORMA). Such approach although a peer-reviewed is not in line with paragraph 19 that outlines the approach for estimation of quantity of renewable biomass.

In reference to the Mean Annual Increment (MAI) of above-ground biomass, as presented in Table 5 of TOOL 30, the choice labeled "Source of data" (d) is employed, namely, "National studies or government data or official statistics." Additionally, PP has followed a QA/QC protocol in accordance with TOOL 30's Table 5. When comparing the values to the FAO and IPCC defaults, the following findings were observed: The FAO's Global Forest Resources Assessment 2000 (Table 14) is not appropriate for comparison as it only provides the percentage distribution of forest types by nation and insufficient information to draw meaningful conclusions regarding MAI. The Asia area as a whole, rather than only India, is covered by the MAI values stated for above-ground biomass growth rates in the 2019

Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (Above-ground biomass growth rates for distinct biological zones). Therefore, it was not feasible to compare directly with statistics from the Indian government.

Conclusion

The above justification clearly articulates the appropriateness of the fNRB estimate in line with the Tool 30. It is also to be noted that project proponent has used most recent data available for calculation of fNRB which is in line with para 10 of tool 30 which says "*10. In the case of ex ante calculation of fNRB, the parameter fNRB shall be estimated using the most recent historical year for which data is available*"

Analysis with other relevant literature

Since there are no other publicly available literature outlining the value of fNRB for the state of Madhya Pradesh therefore comparison has been presented with the value of FNRB with which ICS projects are registered under VERRA .

Comparison of fNRB of the current project with other registered project activity:

Given the absence of other publicly available literature outlining the value of fNRB for the state of Madhya Pradesh, India, a comparison has been made with the fNRB values under which ICS projects are registered with VERRA in the table below.

PROJECT ID	VCS 2942	VCS 2944	VCS 2473	VCS 2754	VCS 2533
f_{NRB} for Madhya Pradesh	89.2%	89.2%	93.1%	92.87%	90.10%

The comparison of the fNRB for the current project with other registered project activities clearly shows that the value of 89.2% is more conservative. This is evidenced by its consideration by PP for the recently registered projects VCS 2942 & VCS 2944. Therefore, in line with a conservative approach, a value of 89.2% for fNRB has been chosen for this project activity instead of the calculated value of 89.34%, which was determined by PP while addressing the PRR comments.

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 is found consistent with Joint PD&MR, thus accepted by VVB team.

Determination of emission reductions by ICS of year1 during year y

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

Where

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

$f_{NRB,y}$ = 0.8920 (for MP)

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

Calculation for **M.P.**

If y=1,

$ER_{y,i,j}$ = *2.7827X 0.0156 X 89.20% X 138.23 X 18,000 X 0.95*

= 91,527 tCO_2 (Round-down Value)

Year	$B_{y,savings,i,j}$	$NCV_{wood\ fuel}$	$f_{NRB,y}$	$EF_{wf,CO2} + EF_{wf,non\ CO2}$	$N_{y,i,j}$	$ER_{y,i,j}$
1	*2.7827*	*0.0156*	*89.20%*	*138.23*	*18,000*	*91,527*
2	*2.7434*	*0.0156*	*89.20%*	*138.23*	*18,000*	*85,722*
3	*2.7045*	*0.0156*	*89.20%*	*138.23*	*18,000*	*80,058*
4	*2.6659*	*0.0156*	*89.20%*	*138.23*	*18,000*	*74,534*
5	*2.6278*	*0.0156*	*89.20%*	*138.23*	*18,000*	*69,892*
6	*2.5900*	*0.0156*	*89.20%*	*138.23*	*18,000*	*63,892*
7	*2.5526*	*0.0156*	*89.20%*	*138.23*	*18,000*	*58,772*

Year	Estimated baseline emissions or removals (tCO_2e)	Estimated project emissions or removals (tCO_2e)	Estimated leakage emissions (tCO_2e)	Estimated net GHG emission reductions or removals (tCO_2e)
Year 2023 (22-January-2023 to 21-January-2024)	91,527	0	0	91,527
Year 2024 (22-January-2024 to 21-January-2025)	85,722	0	0	85,722
Year 2025 (22-January-2025 to 21-January-2026)	80,058	0	0	80,058
Year 2026 (22-January-2026	74,534	0	0	74,534

to 21-January-2027)				
Year 2027 (22-January-2027 to 21-January-2028)	69,146	0	0	69,892
Year 2028 (22-January-2028 to 21-January-2029)	63,892	0	0	63,892
Year 2029 (22-January-2029 to 21-January-2030)	58,772	0	0	58,772
Total	523,651	0	0	523,651
		Total number of crediting years		**7 Year**
		Average annual ERs		**74,807**

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.

3.4.7 Methodology Deviations

Not Applicable.

3.4.8 Monitoring Plan

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

Parameters to be monitored are:

Parameter (s)	Units	Description	Source of monitoring data
$N_{y,i,j}$	Number	Number of project devices of type i and age a that are operating in year *y*	Measured directly or based on a representative sample. As per methodology, the minimum sample size will be determined in which case compliance with 90/10 confidence precision is not obligatory
$\eta_{new,y,i,j}$	Fraction	The efficiency of the improved cook stove type i and batch j determined as per equation 5 of methodology during year y	Based on the efficiency test report from a certified laboratory for 1st year than calculated using equation 5 of methodology.
$B_{y=1,new,l,j,survey}$	Fraction	Annual quantity of woody biomass (fuel wood) used by improved cook stoves in tonnes per device of type i and batch j, determined in the first year of the implementation of the project through a sample survey	Based on the monitoring survey,

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

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

All data will be electronically archived and maintained for the duration of the crediting period and an additional two years.

3.5 Non-Permanence Risk Analysis

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

4 VERIFICATION FINDINGS

4.1 Accuracy of GHG Emission Reduction and Removal Calculations

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

Ex-ante parameters (parameters having default values):

Sl No	Parameter	Description	Value	Unit	Source
1.	$f_{NRB,y}$	Fraction of woody biomass (fuel wood) saved by the project activity during year y that can be established as non-renewable biomass	For Madhya Pradesh – 89.20% (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, GoI, 2019). Assessment team found that the report is publicly available and the reference have been checked and found correct. Hence accepted.
2.	$NCV_{wood\ fuel}$	Net calorific value of the non-renewable woody biomass (fuel wood) that is substituted or reduced	0.0156	TJ/tonne	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 1 Introduction
3.	$EF_{wf,CO2}$	CO_2 emission factor for the use of wood fuel in baseline scenario	112	tCO_2/TJ	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion
4.	$EF_{wf,non\ CO2}$	Non-CO_2 emission factor for the use of wood fuel in baseline scenario	26.23	tCO_2/TJ	2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion

5.	$\eta_{old,i,j}$	The efficiency of baseline cookstove	0.1	Fraction	Methodology default value
6.	η_p	The efficiency of the project stove at the start of project activity	36.42%	Fraction	Manufacturer's specification, third party verified
7.	DF_n	Discount factor to account for efficiency loss of project cookstove per year of operation (fraction).	0.99	Fraction	Methodology default value
8.	Leakage factor	Discount factor to account for leakage	0.95	Fraction	In-line with the applied methodology VMR0006, ver. 1.1 Section 8.3.
9.	Life Span	Operating lifetime of project device for projects opting Equation 5 for determining project stove efficiency	7	Years	Manufacturer's specification. Which is verified by the technical specification certificates submitted by the PP and found correct.

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

Sr. No.	SDG Target	SDG Indicator	Current Project contribution
1.	1.1	1.1.1 Proportion of the population living below the international poverty line by sex, age, employment status and geographic location (urban/rural)	The project activity has contributed to the employment generation for 415 persons (male and female) in the stove manufacturing company and employment of 54 persons (male and female) in the ICS distribution & monitoring agency. Employment of individual with monthly income in the range of INR 12,000 – 35,000, has helped in enhancing the daily income of individual below international poverty line and thereby improve the proportion of population living below international poverty line.
2.	3.9	3.9.1 Mortality rate attributed to household and ambient air pollution	18,000 households experiencing reduction in particulate matter emitted during cooking thereby improving overall health outcomes and reducing burdens of disease.
3.	4.7	4.7.1 Extent to which (ii) education for sustainable development are mainstreamed.	All the project beneficiary households (18000 households) were appraised/ sensitized about the impact of use of traditional cookstoves on human health, environment and gender equality and how use of ICS could foster sustainable development.

4.	5.4.1	5.4.1 Proportion of time spent on unpaid domestic and care work, by sex, age and location.	Reduce drudgery of women and children in 18,000 households covered under the project activity. Use of ICS reduces the wood requirement in compared to the traditional cookstoves and also the cooking time due to proper heat transfer and therefore time is saved in terms of time spent for collecting of fuelwood and cooking.
5.	7.1	7.1.2 Proportion of population with primary reliance on clean fuels and technology	Increase access to clean cooking technology with ICS installations in 18,000 households under the project activity
6.	8.5	8.5.1 Average hourly earnings of employees, by sex, age, occupation and persons with disabilities.	Project activity created a total of 415 New job positions in different roles for manufacturing and and employment of 54 persons (male and female) in the ICS distribution & monitoring agency. distribution of ICS and post-implementation monitoring activity.
7.	9.3	9.3.1 Proportion of small-scale industries in total industry value added.	The project activity has supported the promotion of small-scale industries growth through sourcing/ procurement of 18,000 improved cookstoves from the MSME unit (GHG Reduction Technologies Pvt Ltd).
8.	13.0	Tonnes of greenhouse gas emissions avoided or removed	Contribute to greenhouse gas emission reduction of 15,754 tCO_2e

9.	15.2	15.3.1 Proportion of land that is degraded over total land area	Contribute to the reduction of deforestation of 8,621 tonnes of fuel wood from forests surrounding the communities and reducing pressure on forest reserves

Parameter(s) monitored ex-post

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

Means of verification

Criteria/Requirements	**Assessment/Observation**
Measuring /Reading /Recording frequency	At least once every two years. For current monitoring period it is measured through survey 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	18,000 The value is checked and confirmed based on sample survey submitted.
How were the values in the monitoring report verified?	Measured directly or based on a 90-representative sample. PD has used CDM Standard for sampling standard, version 9 & CDM sampling guideline version 4, 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.
	a.	
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	$\eta_{new,y,i,j}$ 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 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	PP has selected option V as per the applied methodology due to which it 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	Year 1: 34.23% Year 2: 33.89% Year 3: 33.55% Year 4: 33.22% Year 5: 32.89% Year 6: 32.56% Year 7: 32.23%
	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	On-site assessment of the project activity confirms that the necessary QA/QC procedures are in place and the data

	reductions and are necessary QA/QC processes in place? | management system is effective and reliable. b.
Findings	No findings were raised.
Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.

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

Criteria/Requirements	**Assessment/Observation**
Measuring /Reading /Recording frequency	Determined in the first year of project implementation through monitoring survey which is submitted, checked and confirmed.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes. The reporting frequency is in line with the monitoring plan as outlined in the Joint PD & MR and monitoring methodology. This parameter is determined in the first year of project implementation.
Monitoring equipment	Weighing Scale.

Serial No.	EKI-01679
Type	Digital
Accuracy class	5 g (0-10 Kg) 10 g (10-50 Kg)

			Latest Calibration | 27-December-2022 VVB team verified that, PD had carried out calibration of weighing scale prior to fuel measurement. Moreover to verify the same, PP has submitted the calibration certificate/19/ of the weighing scale and it is find consistent and thus, acceptable.
		Value applied	1. For Madhya Pradesh– 3.1458 kg/device/day or equal to 1.1482 tonnes/device/year.
		How were the values in the monitoring report verified?	PD has decided to conduct monitoring survey and the sample size was selected in line with the guidelines provided in methodology Section 8.4 option (b). Determined in the first year of the introduction of the devices (e.g., during the first year of the crediting period, y=1) through measurement campaigns at representative households and/or sample surveys. The conducted surveys were submitted and checked by the assessment team and found correct.
		Does the data management ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	On-site site assessment of the project activity confirms that the necessary QA/QC procedures are in place and the data management system is effective and reliable.
	c.		
Findings	No findings were raised		

Conclusion	The parameter has been monitored appropriately, in accordance with the monitoring plan (as per measurement methods and procedures to be applied) and applied methodology. The monitoring results were recorded consistently as per the approved frequency in the monitoring plan.

The Joint PD & MR formulae for calculating emission reductions, as certified by the used methodology VMR0006 Version 1.1 have been examined and deemed to be accurate. The Joint PD & MR values and the ER verification sheet values have been compared. Additionally, the formulas used in the ER spreadsheet were examined and confirmed to be in line. The assessment team certifies that all calculations are performed in accordance with the formulae specified in the applied methodology VMR0006 Version 1.1 and the monitoring plan requirements, that all parameters are used correctly, that all results are transparent and verifiable, and that all assumptions are described and supported by verifiable evidence.

For the monitoring period from 22-January-2023 to 30-April-2023 (inclusive of both the dates) PD has achieved to reduce 15,754 tCO_2e GHG emissions. The ER sheet was used to verify the emission calculation, which was confirmed to be accurate and accepted.

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO2e)	Net GHG emission reductions or removals (tCO_2e)
22-January-2023 to 30-April-2023	15,754	-	-	15,754
Total	**15,754**	**-**	**-**	**15,754**

4.2 Quality of Evidence to Determine GHG Emission Reductions and Removals

Review of ER sheet reveals that the comparison of actual GHG emission reductions with those in PD estimates:

Ex-ante emissions reductions/removals	Achieved emissions reductions/removals	Percent difference	Justification for the difference
23,251	15,754	- 32.24%	All the project ICS were not installed on the first date of monitoring

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.

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.

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5 VALIDATION AND VERIFICATION OPINION

EKI Energy Services Limited hired LGAI Technological Center, S.A. (also known as Applus+ Certification), to carry out a joint validation and verification of the VCS project activity "Global Cookstove Program (EKI Phase 12)."

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

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

The project activity complies with the requirements of the applied baseline & monitoring methodology, VMR0006, Version1.1/6/, and according to Applus+ Certification, delivers the information in Joint PD & MR as needed by VCS Standard, version 4.4/7(b) /. As previously

mentioned, the validation was carried out utilising a risk-based methodology. The project activity is anticipated to reduce emissions by 523,651 tCO_2e over the length of its crediting period (seven years).

As stated in the Joint PD & MR /1/, Applus+ Certification concludes the validation with a positive opinion and affirms that the VCS Project Activity "Global Cookstove Program (EKI Phase 12)" complies with all 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.

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 22-January-2023 to 30-April-2023 (inclusive of both the dates). Based on the approved baseline & monitoring methodology, as well as the VCS standard, the GHG emission reductions were computed accurately.

Estimated Emission reduction over the crediting period are:

year	Estimated GHG emission reductions or removals (tCO_2e)
Year 2023 (22-January-2023 to 21-January-2024)	91,527
Year 2024 (22-January-2024 to 21-January-2025)	85,722
Year 2025 (22-January-2025 to 21-January-2026)	80,058
Year 2026 (22-January-2026 to 21-January-2027)	74,534
Year 2027 (22-January-2027 to 21-January-2028)	69,892
Year 2028 (22-January-2028 to 21-January-2029)	63,892
Year 2029 (22-January-2029 to 21-January-2030)	58,772

Total estimated ERs	**523,651**
Total number of crediting years	**7**
Average annual ERs	**74,807**

Period of verification: from 22-January-2023 to 30-April-2023 (including both days). Verified reduction to and removals from GHG emissions over the aforementioned verification period:

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
Year A (22-January-2023 to 30-April-2023)	15,754	-	-	15,754
Total	**15,754**	**-**	**-**	**15,754**

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Year	Ex-ante emissions reductions/removals	Achieved emissions reductions/removals	Percent difference	Justification for the difference
Year A (22-January-2023 to 30-April-2023)	23,251	15,754	-32.24%	All the project ICS were not installed on the first date of monitoring

APPENDIX 1: DOCUMENT REFERENCES

No.	Author	Title	References to the document	Provider
1.	PP	Joint PD & MR (Initial) Joint PD & MR Joint PD& MR Joint PD&MR Final Joint PD&MR	Version 01 dated 14-March-2023 Version 02 dated 09-May-2023 Version 03 dated 26-September-2023 Version 04 dated 26-Feburary-2024 Version 05 dated 12-June-2024	PP
2.	PP	Emission reduction spreadsheet Emission reduction spreadsheet (Final)	Version 01 dated 14-March-2023 Version 02 dated 26-Feburary-2024	PP

No.	Author	Title	References to the document	Provider
		Estimated Emission reduction spreadsheet (Final) Estimated Emission reduction spreadsheet (Final) Fnrb Calculation sheet Updated Fnrb Calculation sheet Revised Fnrb Calculation sheet	Version 02 dated 09-May-2023 Version 03 dated 26-Feburary-2024 Version 01 dated 14-March-2023 Version 02 dated 26-Feburary-2024 Version 03 dated 12-June-2024	
3.	NA	ICS Distribution data and carbon waiver records of ICS	-	PP
4.	PP	Declaration(s) from Project proponent on double accounting	23-February-2023	PP
5.	NA	Efficiency certificate of ICS issued by IIT Delhi	09-July-2022	PP
6.	NA	VMR0006 Methodology for Installation of High Efficiency Firewood Cookstoves	https://verra.org/methodologies/vmr0006-methodology-for-installation-of-high-efficiency-firewood-cookstoves/	VERRA
7.	NA	VCS Requirements: a) Verified Carbon Standard Program Guide, version 4.3; b) Verified Carbon Standard, version 4.4; c) VCS Program Definitions, version 4.3 d) VCS Registration and Issuance Process, version 4.3 e) VCS Joint Project Description & Monitoring Report Template, version 4.2 f) VCS Joint Validation & Verification Report Template, version 4.1	-	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	-	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/PAmetho	UNFCCC CDM page

No.	Author	Title	References to the document	Provider
			dologies/tools/am-tool-30-v4.0.pdf	
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 9.	https://cdm.unfccc.int/filestorage/e/x/t/extfile-20210531160756474-Meth_Stan05.pdf/Meth_Stan05.pdf?t=a0h8cmdjY2hufDB3trwzZ7tid7m_L2VQB0SR	UNFCCC CDM page
19.	PP	Calibration Certificate (Weighing Scale)	-	PP
20.	PP	Data Base	-	PP

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.Remaining FAR from validation and/or previous verification

FAR ID	01	Section no.		Date : DD/MM/YYYY
Description of FAR				
NA				
Project participant response				**Date : DD/MM/YYYY**
NA				
Documentation provided by project participant				
NA				
VVB assessment				**Date: DD/MM/YYYY**
NA				

Table 2.CL from this validation / verification

CL ID	01	Section no.	4.1	Date: 03-May-2023
Description of CL				
PP shall clarify the procedure/methodology to be adopted for repair and replacement of the cookstove. Kindly clarify.				
Project participant response				Date: 11-May-2023
Detailed process to be adopted as a part of ICS repair and replacement are detailed out under section 6.3 of the Monitoring plan.				
Documentation provided by project participant				
Revised Joint VCS PD & MR				
VVB assessment				**Date: 19-May-2023**
VVB team verified that, PP has incorporated the details about the Repair and Maintenance of the ICS in revised joint PD & MR, same was found consistent with site visit interview. Thus, CL is closed.				

CL ID	02	Section no.	4.1	Date: 03-May-2023
Description of CL				
PP requested to submit the following documents Submit documents to confirm Average life time of improved cook stove (ICS) and technical specification of ICS. Project Ownership document. Agreement between PP & other entities to verify role claimed. Survey results for the value of values considered ex-ante and ex-post as the meth requirement. PP needs to submit the agreement between PP and other entities involved in project activity. To verify the information provided in the given PD & MR.				
Project participant response				**Date: 11-May-2023**

Technical details by Cookstove manufacturer outlining the expected lifetime of the cookstove submitted Project ownership is established through agreement (end user agreement) between end user and project proponent. As part of the end user agreement the beneficiary declared to transfer the ownership rights of the carbon assets generated from the project activity to EKI Energy Services Ltd. Agreement between end user and project proponent and agreement between ICS manufacturer and project proponent submitted. Survey results (in excel) and survey forms submitted Agreement between end user and project proponent and agreement between ICS manufacturer and project proponent submitted.
Documentation provided by project participant
Improved Cookstove technical details Sample End user Agreement to establish project ownership submitted Agreement between ICS manufacturing company and project proponent submitted Survey results and survey forms submitted
VVB assessment **Date: 19-May-2023**
VVB team verified that, PP has submitted the following documents: Technical specification of the Cookstove manufacturer to verify the Average life time of improved cook stove. VVB team found that, PP has signed an agreement with the beneficiary (end user agreement) according to the agreement the beneficiary declared to transfer the ownership rights of the carbon assets generated from the project activity to PP which is EKI energy, VVB team verified that, copy of the agreement has been submitted by PP to the VVB team, which is found consistent. Thus, CL is closed. PP has submitted the agreement signed between PP and other entities involved in the project activity, thus accepted by VVB team. VVB team observed that, PP has submitted the monitoring survey report to the which is accepted by VVB team. Agreement between end user and project proponent and agreement between ICS manufacturer, which is accepted by PP. **CL is closed in this section.**

CL ID	03	Section no.	4.1	Date: 03-May-2023
Description of CL				
Throughout the joint PD and MR, PP mentioned that first batch of project implemented in Assam state of India (host Country). However, during Desk review, VVB team observed that first batch was distributed in Madhya Pradesh. Kindly Clarify.				
Project participant response				Date: 11-May-2023
The project location is being corrected in the joint PD&MR				
Documentation provided by project participant				
Revised Joint VCS PD & MR				
VVB assessment				Date: 19-May-2023
VVB team verified that, PP has corrected the location of the distribution of the first batch of project implementation in revised joint PD&MR. same was verified during the site visit. Hence, CL is closed.				

Table 3.CAR from this validation / verification

CAR ID	**01**	**Section no.**	**3.1**	**Date: 03-May-2023**
Description of CAR				

PP has submitted joint PD and MR in template version 4.1. However same version of template is not updated. Corrective action sought. Section 1.1 & other sections of the Joint VCS PD & MR found not inline with the guidelines to complete template. PP requested to review same in VVB commented Joint PD & MR and corrective actions sought for the same. Version of VCS standard referred throughout the joint PD and MR is not active currently. Corrective action sought. During review VVB team observed that, date format is inconsistent w.r.t. VCS joint PD&MR template guideline. Details about the annual ER is missing in table of section 5.4. Thus, Correction sought.
Project participant response **Date: 11-May-2023**
The template of joint PD & MR is updated to version 4.2. Section 1.1 and other section revised in accordance to the guidelines to complete template. The VCS version referred to in the Joint VCS PD & MR is modified to Version 4.4. The date format has been modified in the revised version of Joint VCS PD & MR Details of annual ER is included in the table under section 5.4.
Documentation provided by project participant
Revised Joint VCS PD & MR
VVB assessment **Date: 19-May-2023**
VVB team verified that, PP has submitted the updated joint PD&MR in latest template of version 4.2. PP has updated the section 1.1 of the joint PD&MR and updated it, which I accepted by VVB team. VVB team verified that, PP has updated the VCS standards and guideline in updated joint PD & MR. **Thus, CAR is closed in this section.**

CAR ID	02	Section no.	3.2	Date: 03-May-2023
Description of CAR				
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. Corrections sought.				
Project participant response				Date: 11-May-2023
Declaration submitted by Project Proponent in effect of avoidance of double counting and non-participation under REC mechanism submitted. In addition, declaration by ICS manufacturer and ICS distributor is also submitted to ensure no double counting.				
Documentation provided by project participant				
Declaration by Project Proponent Declaration by ICS manufacturer Declaration by ICS distributor				
VVB assessment				Date: 19-May-2023
VVB team observed that, PP has submitted the following documents to the VVB team. Submitted copy of no double accounting declaration dated- 27-Feb-2023 is found consistent, Thus, CAR is closed. PP submitted the ICS manufacturer declaration dated: 27-March-2023. VVB team found that, details about the other entities involved in ICS distribution and ICS manufacturing is found consistent in Joint PD&MR, moreover to verify the same PP has submitted the undertaking to the VVB team. **Hence CAR is closed.**				

CAR ID	03	Section no.	3.2.2	Date: 03-May-2023
Description of CAR				
PP has provided detailed information related to local stakeholder consultation under section 2.2. Howover, evidence to verify the same is found missing too.				
Project participant response				**Date: 11-May-2023**

Stakeholders' consultation meeting Public Notice Stakeholders' consultation meeting Attendance Sheet Stakeholders' consultation meeting Minutes of Meeting Stakeholders' consultation meeting Photographs
Documentation provided by project participant
-
VVB assessment | **Date: 19-May-2023**
VVB team verified that, PP has submitted the PP has submitted copy of the LSC public notice, Attendance Sheet, Minutes of Meeting, meeting Photographs to the VVB team, thus accepted by VVB team, **CAR in this section is closed.**

CAR ID	04	Section no.	4.1	Date: 03-May-2023
Description of CAR				
VVB team observed that, PP is not clear about the type of fuel. Since the wood and woody biomass are two different things. FNRB Value shall be in 2 decimal digit for more conservativeness. Details about the indoor pollution is not clear in section 2.3 of Joint PD&MR. The geographical location of the project activity is not clear in joint PD&MR. Correction sought for the same. Title of the Appendix is not clear. VVB team found that, PP has not submitted the FNRB sheet for M.P. to the VVB team. Survey report is found missing to crosscheck the annual woody biomass consumption determine by PP. Thus, Correction sought. VVB team observed that, details about the no. of ICS distributed during the current monitoring period is not clear as per there location in Joint PD&MR.				
Project participant response				Date: 11-May-2023
Wood is being used as baseline fuel and also in improved cookstoves. "Wood"/Fire wood is now being used under joint PD&MR to represent wood consumption. FNRB Value of 87.31% is now considered for ER estimation Section 2.3 is being further elaborated to include information on how use of improved cookstove lowers indoor air pollution. Geographical location of the project activity is updated in joint PD&MR Title of Appendix is modified FNRB sheet of MP submitted Survey report submitted Database submitted to provide beneficiary wise details to whom ICS is being provided				
Documentation provided by project participant				
Joint PD&MR FNRB sheet Survey report Database				
VVB assessment				**Date: 19-May-2023**
VVB team verified that, Wood"/Fire wood is now being used under joint PD&MR has been updated by PP. FNRB Value of 87.31% is more conservative in nature as per verra. VVB team verified that, details about the indoor air pollution is now updated in section 2.3 of the revised Joint PD&MR. PP has updated the geographical location of the project activity in revised joint PD&MR. Appendix is now updated in revised joint PD&MR. VVB team verified that, PP has submitted the FNRB calculation sheet. VVB team verified that, PP has submitted the Survey report to verify the annual woody biomass consumption. Details about the distributed ICS has been submitted by PP, which is accepted by VVB team, **CAR is closed.**				

CAR ID	05	Section no.	4.2	Date: 03-May-2023
Description of CAR				

PP requested to submit supporting documents for the monitored parameters. PP shall submit supporting documents for SDG indicators achieved during current monitoring period as explained in sec. 1.17 of PD&MR.	
Project participant response	**Date: 11-May-2023**
Survey result outlining the proportion of cookstoves under operation and quantum of biomass consumed submitted Details of employment for ICS manufacturing and ICS distribution submitted.	
Documentation provided by project participant	
Survey Result Employment declaration by distribution agency Employment declaration by manufacturing company	
VVB assessment	Date: 19-May-2023
VVB team verified that, PP has submitted the PP has submitted the supporting document to crosscheck the monitoring parameter value. Employment generation by distribution agency is submitted to the VVB team. VVB team verified that, PP has submitted the Details of employment from manufacturing and ICS distribution submitted. **CAR 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.	Technical Expert	OR	Kumar	Pankaj	TQC-Outsourced entity	Yes	Yes	Yes	Yes
2.	Lead Auditor	OR	Takarkhede	Atul	TQC-Outsourced entity	Yes	No	Yes	Yes
3.	Auditor/Technical Expert in Trainee	OR	Shrivastava	Ishan	TQC-Outsourced entity	Yes	Yes	Yes	Yes
4.	Observer	OR	Sharma	Khagesh	TQC-Outsourced entity	Yes	Yes	Yes	Yes
5.	Observer	OR	Singh	Anjali	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	Mr. Simon	Applus+ Certification
2.	Approver	IR	Calle de Miguel	Agustin	Applus+ Certification

Short CVs of the Team:

1. **Mr. Pankaj Kumar** worked as team leader – Bihar for South Asia Climate Proofing and Growth Development (CPGD) – Climate Change Innovation Programme (CCIP) supported by DFID that seeks to mainstream climate change resilience into planning and budgeting at the national and sub-national level in India, Pakistan, Nepal, and Afghanistan. Pankaj Kumar has worked previously with IL&FS Infrastructure Development Corporation and BUIDCO (Bihar Urban Infrastructure Development Corporation), Govt. of Bihar as Environmental Specialist for WB & ADB funded projects. Prior to this, he worked with Carbon Check (UNFCCC accredited DoE), Johannesburg, RSA as Team Leader for validation, verification of around 100 GHG projects in Asia, Africa, USA, Asia Pacific & Americas. Pankaj is accredited Lead Auditor, Validator, Verifier and Technical Expert for Sectoral Scope/Technical Area – 1.1, 1.2, 3.1 & 13.1 by UNFCCC DoE (Designated Operational Entity), APPLUS, Spain. He is also member of task force on climate change & human health, Health Department, GoB and on roster of UNICEF's WASH experts. He is an experienced, qualified and result oriented Environment Professional having more than 14 yrs. of relevant experience in Climate Change (Mitigation &Adaptation), Environmental Due Diligence, Disaster Risk Reduction, Validation and Verification of GHG project under CDM, Verified Carbon Standard, Gold Standard & Social Carbon Standard, Brazil. He provides technical support for environmental investigative, consultative and remedial projects involving air, water and soil, Waste management, EIA, Environmental Compliance, ISO 14001, OHSAS 18001, GHG accounting (ISO 14064) and Carbon foot printing.Pankaj Kumar is Masters in Environment Management from Forest Research Institute (University), I.C.F.R.E, Dehradun, which is Centre of Excellence in South East Asia for Forestry education & research and PGDEL from National Law School of India University, Bangalore (India).
2. **Dr. Atul Takarkhede** is Ph.D. (Environmental Sciences) from Institute of Science, RTM Nagpur University, Nagpur, and he has already published different technical papers related to environmental sciences. He counts with more than 11 years of experience in field of Environmental Auditing, consulting and accreditation. He is an expert in ISO 9001-14001, CO2/GHG Reporting, Carbon Foot Print, Energy, Water and Waste Management reporting for organizations' environmental performance. His professional portfolio is mainly related with carrying out EIA, conducting QA/QC of EIA Reports; conducting environmental/water audits; NABET requirements appliance, functional area expert in Water Pollution & Solid & Hazardous Waste management among others. Furthermore, he counts with solid experience on CDM-VCS-GS consultancy and auditing. Currently he is associated with True Quality Certifications Private Limited and empanelled with Applus+ Certification to carry out GHG audits in the aforementioned schemes.

3. **Mr. Ishan Shrivastava**, has done bachelor of engineering in Mechanical Engineering from Rajiv Gandhi Proudyogiki Vishwavidyalaya, India. He has a year of working experience in India's one of the Maharatna Company i.e. GAIL (India) Limited in the area of Natural Gas, Energy & Environment. Currently. He is working in True Quality Certifications Pvt. Ltd. (An outsource entity for LGAI Technological Center, S.A. (Spain) "Applus+ Certification") since 2019 and has been involved as Auditor (Validator/Verifier) for Validation and Verifications of Project Activities (Renewable and nonrenewable projects) under CDM/VCS/GS4GG/GCC programs. Mr. Ishan Shrivastava is based in Indore, India. Mr. Ishan Shrivastava may participate as part of the Audit Team as Auditor for the assessment.
4. **Mr. Khagesh Sharma**, has done bachelor of engineering in Electronic and Communication Engineering from Rajiv Gandhi Proudyogiki Vishwavidyalaya (Bhopal), India. He has 3 years of experience as Engineer, involve in the solar project design & consulting, Operation and maintenance activities. Currently, he is working in True Quality Certifications Pvt. Ltd. (An outsource entity for LGAI Technological Center, S.A. (Spain) "Applus+ Certification") since 2022 and has been involved in supporting Audit teams for Verifications of Project Activities (Renewable and non-Renewable projects) under CDM/VCS/GS4GG programs.
5. **Ms. Anjali Singh**, has done bachelor of engineering in Electronic and Communication Engineering from Rajiv Gandhi Proudyogiki Vishwavidyalaya, India. She has a year of working experience in Idea cellular limited, India as Graduate Engineer Trainee. She has further 3 years of experience with Gargee Energies, India as Assistant Engineer involve in the solar rooftop project design & consulting, Operation and maintenance activities. Currently, she is working in True Quality Certifications Pvt. Ltd. (An outsource entity for LGAI Technological Center, S.A. (Spain) "Applus+ Certification") since 2021 and has been involved in supporting Audit teams for Verifications of Project Activities (Renewable and non-Renewable projects) under CDM/VCS/GS4GG programs.
6. **Mr. Simon Shen** (Master's Degree in Thermal Energy Engineering, Bachlor's Degree in Enviromental Engineering) is an Auditor appointed by Applus+ LGAI for the GHG project assessement, auditing and technical review. He has more than 6 years of working experience in CDM/GS4GG/VCS project assessment and review with Applus+, apart form the yerars of experience working as GHG Auditor and ISO 9001/14001 in TUV SUD for 3.5 year before he joined Applus+. Mr. Simon Shen has extensive experience also former Applus+ Shanghai CDM Technical Manager. Mr. Simon Shen is based in shanghai, Chaina. Mr. Simon Shen participates in the project technical review team