ENERGY EFFICIENT COOK STOVE IMPLEMENTATION IN INDIA

Document Prepared By

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Summary:

VKU Certification Pvt. Ltd. (hereafter referred as VKU) has been commissioned by Enen Green Services Private Limited to verify the greenhouse gas emission reductions reported for the project activity "Energy Efficient Cook Stove Implementation in India (VCS 2336-MP03)", covering monitoring period from **01-April-2022 to 27-June -2023** (inclusive of both dates) under fixed crediting period of 10 years from **28-June-2019 to 27-June-2029** (inclusive of both dates) with regards to the relevant requirements for VCS Standard version 4.5 dated 11-December-2023.

Purpose: The purpose of the verification is to have an independent review and ex-post determination of the monitored reductions in GHG emissions and verify that monitoring methodology was implemented according to monitoring plan and monitoring data, used to confirm the reductions in anthropogenic emissions by sources is sufficient, definitive and presented in a concise and transparent manner.

The verification scope of the project is:

- To verify that the project is implemented as described in the registered VCS Joint PD&MR/3/.
- To assess the project's compliance with other relevant rules including the host country legislation (India).
- To confirm that the monitoring system is implemented and fully functional to generate voluntary carbon units without any double counting.
- To establish that the data reported are accurate, complete, consistent, transparent and free of material error or omission by checking the monitoring records and the emissions reduction calculation.
- To verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan of registered VCS Joint PD&MR/3/ which includes sampling of ICS as per the CDM sampling guideline/16/ and CDM sampling standard/17/.
- To evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatements;
- To verify that reported GHG emission data is sufficiently supported by evidence.

Verification has been conducted using VKU's procedures in line with the requirements specified in the VCS program guide version 4.4/7/, VCS standard Version 4.4 & latest 4.5/8/, VCS validation and verification manual version 3.2/9/ and the CDM EB and applying standard auditing techniques. The verification consisted of desk review, acceptance sampling of the ICS, on-site assessment and the resolution of outstanding issues and the issuance of the final verification report and certification.

The verification team ensured that the reported emission reductions are complete and accurate in accordance with applicable VCS requirements in order to be certified therefore the verification team has detected no further uncertainties.

The GHG emission reductions were calculated on the basis of the approved methodology VMR0006 Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1/12/ the monitoring plan included in the VCS Joint project description & Monitoring Report, version 06 dated 26-November-2021/3/.

VKU followed the rule-based approach to perform this verification. During this verification, **03 Corrective Action Requests (CARs) and 04 Clarification Requests (CLs) and 00 Forward Action Request (FAR)** were identified related to operation, monitoring and GHG emission reduction calculation of the VCS project activity in relation to all relevant VCS requirements for the project activity and the applied baseline and monitoring methodology. These CARs and CLs are successfully closed after necessary corrections/clarifications by the client. The same has been discussed in Appendix C of this verification report.

Summary of the verification conclusion:

In conclusion, it is VKU's opinion that the project activity "Energy Efficient Cook Stove Implementation in India" **VCS project ID 2336**, meets all relevant requirements for VCS standard and guidelines and correctly applies the baseline and monitoring methodology **VMR0006 Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1/12/.**

The monitoring system is in place and the emission reductions are calculated without material misstatements. Hence, VKU is able to certify that the emission reductions from the project during the 3rd monitoring period from **01-April-2022 to 27-June-2023** (inclusive of both dates) under fixed crediting period of 10 years from **28-June-2019 to 27-June-2029** (inclusive of both dates) amounts to **50,099 tCO_2e.**

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1 INTRODUCTION

1.1 Objective

VKU Certification (hereafter referred as VKU) has been contracted by Enen Green Services Private Limited (hereafter referred as Enen Green), the Project Proponent(PP), to undertake the third VCS verification of the project titled "Energy Efficient Cook Stove Implementation in India'' (VCS ID 2336) for the third monitoring period from **01-April-2022 to 27-June-2023** (inclusive of both dates) for a period of **1 year, 2 months, 27 days (453 days)** under fixed crediting period of **10** years from **28-June-2019 to 27-June-2029** (inclusive of both dates).

The main objective of this project activity is to involve promotion of improved cooking stoves (ICS) to the people of socially deprived community in India. The project intends to avail the households with clean cooking solutions; thereby, displacing the less efficient traditional cooking stoves from the kitchen with stoves of better efficiency. Replacement of the traditional cooking stoves with ICS aims to reduce exposure of the family members, specifically women, to the indoor air pollution and therefore results in saving of health-related expenses.

This report presents the results of project verification conducted by VKU in accordance with VCS Requirements and UNFCCC criteria for CDM, and specified criteria to ensure consistent project operations, monitoring and reporting.

The objectives of this verification exercise are, by review of objective evidence, to establish that:

- To have an independent evaluation of project activity by an accredited validation and verification body against the requirements of the VCS Program Guide Version 4.4/7/, VCS Standard version 4.4 and VCS standard latest version 4.5/8/.
- The project is implemented as described in the VCS Joint Project Description & Monitoring Report/3/.
- The monitoring system is implemented and fully functional to generate emission reductions without any double counting /19/.
- The data reported are accurate, complete, consistent, transparent, and free of material error or omission by checking the monitoring records and the emissions reductions calculation.

The verification process is aimed to confirm the seamless implementation and full functionality of the monitoring system, ensuring the accurate generation of Verified Carbon Units (VCUs) without any instances of double counting/19/. Additionally, meticulous scrutiny of the monitoring records and emissions reduction calculations has been carried out to guarantee the precision as allowed by the sampling requirements, completeness, consistency, transparency, and absence of any material errors or omissions in the reported data. This aims to establish the reliability and integrity of the data.

1.2 Scope and Criteria

The scope of this verification is the independent, objective review and ex-post determination of the monitored reductions in GHG emissions from the **"Energy Efficient Cook Stove Implementation in India"** (VCS ID 2336) for the period from **01-April-2022 to 27-June-2023** (Inclusive of both dates). The verification of this project is based on the Monitoring Report of this monitoring period /1/, registered VCS Joint PD&MR /3/, Emission reduction calculation spreadsheet /2/, supporting documents made available to the verifier and information collected through performing on-site interviews. Furthermore, publicly available information was considered as far as available and required.

VKU has employed a risk-based approach in the verification, focusing on the identification of significant risks and reliability of project monitoring and generation of emission reductions.

The verification is carried out on basis of the following requirements, applicable for this project activity:

- VCS Programme Guide (Version 4.4) /7/
- VCS Standard version 4.4 and VCS Standard latest version 4.5 /8/
- VCS Program Definitions (Version 4.4) /6/
- VCS Validation and Verification manual version 3.2/9/
- VCS Approved methodology VMR0006 Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1/12/
- CDM Standard: Validation and Verification Standard for Project Activities version 3.0/10/
- CDM Standard: Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 09.0/17/
- Guidelines for Sampling and surveys for CDM project activities and programmes of activities, version 04.0/16/
- Other relevant rules, including the host country legislation.

The method and criteria used for verification consisted of the following phases:

1. Desk review of VCS Project Description & Monitoring Report, registered under version 06 on 26-November-2021 and other supporting documents listed in Table-04.

2. Interviews & Focussed Group Discussions with End-Users, Stakeholders & PP representatives involved in project's implementation/30//34/.

3. Resolution of outstanding issues and issuance of final verification report and applicable VCS Verification Deed of Representation.

VKU conducts all its work under strict rules to safeguard impartiality and ensure the independence of the verification team. The verification team does not provide any consulting or recommendations for the client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the monitoring activities.

1.3 Level of Assurance

All the revisions of the verification report before being submitted to the client were subjected to an independent internal technical review to confirm that all verification activities had been completed according to the pertinent VKU's procedure, with a **Reasonable level of assurance**.

The verification report is based on the review of Monitoring report /1/, registered VCS Joint PD&MR /3/ and Supporting Documents /18//19//20//21//22//23//24//25//26//27//28//29//30//31//32//33//34/ made available to the verification team and information collected through performing on-site interviews /30/.

The technical review was performed by a technical reviewer(s) qualified in accordance with VKU's qualification procedure.

Table 01: The verification team consist of the following personnel:

Role/Qualification	Last Name	Middle Name	First Name
VCS Team Leader & Technical Expert TA 3.1 (Cookstove)	Sharma	NA	Deepali
Validator/ Verifier-Trainee	Chauhan	NA	KM Nisha
Project Trainee	Kadwe	NA	Chanchlika

Table 02: The technical reviewer consists of the following personnel:

Role/Qualification	Last Name	Middle Name	First Name
Technical Reviewer & Technical Expert TA 3.1 (Cookstove)	Kumar	NA	Barun

The threshold for quantitative materiality with respect to the aggregate of errors, omissions and misrepresentations, relative to the total reported GHG emission reductions and/or removals is limited to **5% percent**, as per **section 4.1.10 of the VCS Standard version 4.5**/8/. As the project is a small project, the materiality of the project activity based on actual emission reduction achieved is **5%** of **50,099 tCO_2e** which is equal to **2,504.95 tCO_2e**.

1.4 Summary Description of the Project

The project "Energy Efficient Cook Stove Implementation in India", employes the VCS methodology; VMR0006 version 1 /12/. The project involves distribution and implementation of fuel-efficient improved cook stove (ICS) in state of Assam, India. The name of ICS is GTW-M "Green Tech Wood-based – Medium", which is a model name given to the ICS internally by the PP. The project Proponent has initially aimed to distribute 25,520 ICS, however only 17,379 fuel efficient (ICS) were distributed in total to the households of state of Assam, India. Each household received 01 ICS. The ICS reduces the amount of non-renewable biomass used for cooking. PP has considered each ICS distributed as a project activity instance. The start date for the project is 28-June-2019 which is the date of installation of the first stove under the project activity and the last stove has been distributed on 10-January-2020 in 3 Districts Baksa, Udalguri and Barpeta of state-Assam, Country India which are covering 68.1% (17,379 ICS) of initial aimed to distribute 25,520 ICS.

The total estimated GHG emission reductions achieved from project activity instances are 50,099 tCO_2e for this monitoring period from 01-April-2022 to 27-June-2023.

The project stoves are having better efficiency compared to baseline cooking system i.e., open fire and therefore results in saving firewood compared to baseline scenario. Each project ICS included in the project activity has an end user agreement executed between end user and PP/18/.

As confirmed during the interviews, the overall monitoring is managed by the Project implementor Greentech Environment, India. Enen Green Services Private limited is acting as entity responsible for communication with VERRA.

The project activity is implemented within the geographical boundary of Baksa, Barpeta and Udalguri district, Assam state of India. It was verified through Google Earth/28/, also geo

coordinates are verified during desk review and through GPS Map Camera/29/ during the site visit by onsite assessment team and found inconsistent with the data provided in the registered VCS PD&MR/3/. So, during the current monitoring period, PP has requested a deviation regarding this issue in Section 3.2 of MR. The emission reductions are calculated conservatively as per the applied methodology/12/.

The details of the project are mentioned in the table:

Project Proponents' Name	1st ICS distribution Date	Last ICS distribution date	Total ICS Number	Location (District/State)
Enen Green services Private Limited	28-June-2019	10-January-2020	17,379	District- Barpeta, Baksa, and Udalguri State- Assam Country- India

By implementing the project activity, the following GHG sources of emissions are reduced/avoided:

Baseline/Source	As per methodology VMR0006 Version 1 section 8.1, the baseline emissions are not accounted separately, but instead quantifies emission reductions as a function of the reduction in the amount of non-renewable biomass fuel consumption in the efficient project stoves as compared to baseline stoves.
Project Equipment/Sink	The avoidance of GHG emission into the atmosphere is due to improved cooking stove (ICS) which directly reduces fuel wood consumption, of this project which is in line with 3.1.1 of ISO:14064 part-2
Baseline GHG emission source reduced/avoided	Emission reductions are achieved as a function of the reduction in the amount of non-renewable biomass fuel consumption in the efficient project stoves as compared to baseline stoves.

Under this project one improved cookstove is distributed per household in state of Assam, India with per-stove thermal efficiency for each vintage year in **Table 03** below for the current monitoring period. This is calculated as per section 8.4 equation 4 of the applied methodology/12/.

Table no.03: Efficiency of ICS over Vintages

S. No.	Vintage Number	Efficiency value applied
1	Vintage 1	33.25%
2	Vintage 2	30.94%
3	Vintage 3	30.63%
4	Vintage 4	30.33 %
5	Vintage 5	30.02%

The project technology has been witnessed by the audit team during on-site audit and found to be operating as per the specifications and description. Each ICS has a life span of 5 years as confirmed from lifespan certificate/20/.

The project's fixed crediting period is from **28-June-2019 to 27-June-2029** (inclusive of both dates). For the current monitoring period from **01-April-2022 to 27-June-2023** (inclusive of both dates) operation of **17,379 ICS** in respective households will result in overall reduction of **50,099 tCO_2e** emission reductions/2/.

2 VERIFICATION PROCESS

The project is registered under VCS with reference number 2336. The Joint Validation & Verification/4/was performed by Applus+ Certification. This is the 3rd verification of the project activity that is being conducted by VKU Certification Pvt. Ltd for the monitoring period from **01-April-2022 to 27-June-2023** (inclusive of both dates) under the fixed crediting period from **28-June-2019 to 27-June-2029** (inclusive of both dates).

2.1 Method and Criteria

Verification has been conducted using VKU's procedures in line with the requirements specified in the VCS Requirements, i.e., VCS Program Guide Version 4.4/7/, VCS standard document version 4.4 & version 4.5/8/.

Sampling methods were employed by the assessment team for the verification of GHG emission reductions or removals generated by the project in accordance with the paragraph 26 of the Standard: Sampling and surveys for CDM project activities and programmes of activities, Version 09.0/17/.

The GHG emission reductions are on the basis of the approved Baseline and monitoring methodology **VMR0006 Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1** /12/.

Scope: 03 Energy Demand

Project type: Type II – Energy efficiency projects with maximum output of 60 GWh per year(electrical) or 180 GWh (thermal) per year

Keeping in line with ISO 14064-3; 2019 (clause 06) & 14065-2020 (clause 09)/36/ Standard guidelines, assessment team has framed down the process for completing the verification and has followed the same throughout the execution of verification audit of the project activity.

The verification consisted of the following phases-

1. **Planning and intimation to VERRA regarding site visit**: The assessment team plans the GHG-programme site visit and starts with a desk review. Assessment team also shared a NOVS Notice of Validation/Verification Services (NOVS) Form and submit it to auditing@verra.org.
2. **Strategic Analysis**: Assessment team performed strategic analysis to understand the activities and complexity of the project, and to determine the nature and extent of the verification activities. The results of the strategic analysis shall be used in the risk assessment.
3. **Risk Assessment**: Assessment team performed risk assessment of the GHG statement to identify the risk of a material misstatement or nonconformity with the criteria.

4. **Evidence Gathering Activities**; Using a risk-based approach assessment team prepared evidence gathering activities, to collect sufficient and appropriate evidence upon which to base the conclusion & determine whether the GHG statement conforms to the criteria, taking into account the principles of the standards or GHG programme that apply to the GHG statement.

5. **Audit and Sampling Plan**: An audit plan is prepared, including all sub-elements required for an integrated verification process aligned with the contract, scope, objectives, level of assurance, and materiality. It was documented in VKU.F24W.Audit and Sampling Plan_VKU.VER.137.23_VCS_2336/35/.

6. **Evidence Gathering Plan**; The evidence-gathering plan is prepared based on the results of the VKU's Assessment Team's risk assessment. It was designed to lower the verification risk to an acceptable level. The evidence-gathering plan thus specifies the type and extent of evidence-gathering activities.

7. **Client Confirmation**: The site visit audit plan is sent to the client.

8. **Document Review**: Relevant documents, such as the verification report, monitoring plan, methodology, VCS Joint PD&MR, and QA/QC procedures, are thoroughly reviewed.

9. **On-Site Assessment**: This includes interviews and evaluation of the actual project scenario.

10. **Resolution of Discrepancies**: Any non-conformities identified during the assessment are addressed and resolved.

11. **Independent Review**: A technical reviewer provides an independent assessment.

12. **Final Verification**: After completeness checks, the verification report and certification are issued.

The following sections outline each step in more detail.

2.2 Document Review

- During the document review, VKU has applied standard auditing techniques to assess the quality of information provided. The verification has been performed primarily based on the review of the monitoring report (MR) version 01 dated 03-August-2023, version 02 dated 10-January-2024, version 03 dated 08-February-2024, version 03.1 of 23-February-2024 and version 03.2 of 05-November-2024/1/ were assessed as part of the verification.
- The emission reduction (ER) calculations spreadsheet version 01 of 03-August-2023, version 02 dated 10-January-2024 and Version 03 of 23-February-2024 received from the PP /2/ were also assessed along with the monitoring reports as part of the verification. In addition, the registered Project Documents, VCS Joint PD&MR/3/ and the registered VCS Joint Final Validation and Verification version 05 /4/ are reviewed in particular for baseline estimations and monitoring

plan for the project. The following table lists the documentation that have been reviewed during the verification:

Table no: 04 Lists of the documentation that were reviewed during the current verification:

Current Verification Reference Documents	
/1/	**ENEN Green Services Private Limited :** VCS monitoring report for "Energy Efficient Cook Stove Implementation in India ", • Version 01 of 03-August-2023, • Version 02 of 10-January-2024 • Version 03 of 08-February-2024 • Version 03.1 of 23-Februaury-2024 • Version 03.2 of 05-November-2024
/2/	**ENEN Green Services Private Limited** : VCS emission Reduction Calculation spreadsheet "Energy Efficient Cook Stove Implementation in India ", • Version 01 of 03-August-2023, • Version 02 of 10-January-2024 • Version 03 of 23-February-2024
Background Documents/Weblinks	
/3/	**ENEN Green Services Private Limited**: Registered VCS Joint PD&MR for the project Energy "Efficient Cook Stove Implementation in India" version 06 dated 26-November-2021
/4/	**ENEN Green Services Private Limited:** Joint Validation & Verification Report version 05 dated 26-November-2021 prepared by LGAI Technological Center, S.A. (Applus+ Certification)
/5/	VCS: 2nd Verification report version 02 dated 18-November-2022 from the monitoring period – 28-June-2020 to 31-March -2022 concluded by 4K Earth Services Private Limited.
/6/	VCS program Definitions (Version 4.4) of 29-August-2023
/7/	VCS Program Guide, version 4.4 of 29-August-2023
/8/	VCS Standard, version 4.5 of 11-December-2023 VCS Standard, version 4.4 of 17-January-2024
/9/	VCS Validation and verification manual version 3.2 dated 19-October-2016

/10/	CDM Validation and Verification Standard version 3.0 dated 09-September-2021
/11/	VCS: Monitoring report Template VCS Version 4.2
/12/	CDM Executive Board: Baseline and Monitoring methodologies: VCS:VMR0006-Methodology-for-Installation-of-High-Efficiency-Firewood-Cookstovev-v1.0
/13/	VERRA: Project search
/14/	Gold Standard Foundation
/15/	Tool 30 v3.0 - Calculation of the fraction of non-renewable biomass
/16/	UNFCCC: Guidelines for Sampling and Surveys for CDM Project activities and Programme of Activities, Ver. 4.0
/17/	UNFCCC: Standard for Sampling and surveys for CDM project activities and programmes of activities, Version 09.0
Reference/Supporting documents submitted by PP to VVB	
/18/	**ENEN Green Services Private Limited** : End user agreement between PP and end user of all the sample visited during site visit.
/19/	**ENEN Green Services Private Limited** **:** Declaration to avoid double counting, non-inclusion of project in another standard dated **19-December-2023**
/20/	ICS Efficiency report/WBT Report submitted by Third-Party Laboratory Lifespan Certificate
/21/	**ENEN Green Services Private Limited**: User survey Sample User Survey Form
/22/	**ENEN Green Services Private Limited**: Grievance/Repair/Maintenance- Training awareness records
/23/	**ENEN Green Services Private Limited:** Sampling survey sheet of Monitoring Period 3 (01-April-2022 to 27-June-2023)
/24/	**ENEN Green Services Private Limited:** Spot Check Mechanism records
/25/	**ENEN Green Services Private Limited:** Declaration of Employment created
/26/	**ENEN Green Services Private Limited:** Monitoring Survey report of current monitoring period (01-April-2022 to 27-June-2023)

/27/	MOU for Baseline fuel consumption survey in Households, in Assam state of India, followed by Implementation and Management support for future projects/Programs between Enen Green services private limited & Greentech Environment.
VVB Documents used during Current Verification	
/28/	GPS Google earth software used for Location; Google Earth
/29/	GPS Map Camera: Geotag Photos & Add GPS Location
/30/	Interviews conducted onsite detailed in section 2.3 of this report documented during onsite visit by assessment team of **VKU Certification Pvt. Ltd**. during onsite visit in a form called as **VKU.F46W. Attendance Sheet of Onsite Audit**
/31/	Site visit photographs dated 25-November-2023 to 27-November-2023
/32/	Sampling Survey Questionnaire put to use by VKU during Onsite Assessment with End Users
/33/	VKU's Internal Procedure on Sampling Method & Guidance: **VKU.F74A.Sampling Plan Method and Guidance**
/34/	Focussed Group Discussion conducted during onsite visit from 25-November-2023 to 27-November-2023
/35/	VKU.Audit and Sampling Plan_ VKU.VER.137.23_VCS_2336
/36/	ISO 14064-2:2019: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas reductions or removal enhancement. ISO 14064-3:2019: Specification with guidance for verification and validation of greenhouse gas statements ISO 14065:2020: General principles and requirements for bodies validating and verifying environmental information

2.3 Interviews

The **Table No.05**, **Table No.06** and **Table No.07** below describe the onsite interview process/30/ and further identifies personnel, including their roles, who were interviewed and/or where personnel responsible for monitoring of the project activity, data collection and management, and QA/QC procedure were interviewed.

The details of the people interviewed during monitoring period are mentioned in the table below as per the **VKU.F46W. Attendance sheet** duly signed by PP and other representatives

Location: Commune of Chief town: District Baksa, Udalguri and Barpeta of state Assam, country India.

Table no.05: Details of Personnel Interviewed during site visit:

S. No.	Date	Name and Role	Organization	Topic
1	25-November-2023 to 27-November-2023	Abhishek Kumar Shrivastava (Male)	Enen Green services Private Limited	• Description of the project activity, ownership, avoidance of double counting, • Emission reductions calculations • Monitoring plan and monitoring arrangements • Data recording, QA/QC procedures. • ICS and its make, operational status, commissioning details, project investment etc. • Implementation Status, Training to maintain cookstove, Spot-checking mechanism, Documentation, Benefits of the project
2		Nayan Desai (Male)	Greentech Environment	
3		Dharmendra Kalita (Male)	Greentech Environment	

The topics covered during interview ranges from general features and implementation of project activity to technical details of the project like distribution of cookstoves, spot check procedure, annual follow-up visits to households, call over helpline number, process of Monitoring/sampling survey and archiving procedures, grievance resolution process etc.

Table no.06: Details of Personnel Interview/Focussed Group Discussion with local Implementing partner & stakeholders

S. No.	Date	Name and Role	Topic
1	25-November-2023 to 27-November-2023	Mina Katulkar BRPT 1829	• Zero-Cost distribution • Baseline Scenario • Benefits of the project • Interview with end user noticed reduction in cooking time, wood using, smoke etc. • How to contact, if any problem happens in cookstove • Health issue
2		Haso Boro UDL 2339	
3		Sameshi Dirmani UDL 2439	
4		Thingini Basumatary UDL 0993	

Table no: 07: Details of Personnel Interview/Focussed Group Discussion with end users/beneficiaries

Topic of Discussion that was conducted with the end-users included/34/:

- On-site Interview on the number of project devices operating during the year y ($N_{y,l,j}$)
- Evaluation of the baseline scenario, usage of pre-project device (if any)
- Zero-cost distribution of ICS

S. No.	Date	Name and Gender	Stove ID	Distribution date
1.		**End User Name:** Nijara Kalita (Female)	• **Stove ID**; BRPT 1450	05-January-2019
2.		**End User Name:** Smitirekha Das (Female)	• **Stove ID;** BRPT 2213	31-July-2019
3.		**End User Name:** Dhiraj Kumar Deka (Male)	• **Stove ID;** BRPT 2741	10-September-2019

4.	25-November-2023 to 27-November-2023	**End User Name:** Chanchala Talukdar (Female)	• **Stove ID:** BKS 4108	30-June-2019
5.		**End User Name:** Tara Chetri (Female)	• **Stove ID:** BKS 4730	08-October-2019
6.		**End User Name:** Pramila Katila (Female)	• **Stove ID:** BKS 0723	12-August-2019
7.		**End User Name:** Fatema Begum [1] (Female)	• **Stove ID:** UDL 0052	09-July-2019
8.		**End User Name:** Mariyam Nessa (Female)	• **Stove ID:** UDL 0223	21-July-2019
9		**End User Name:** Jayanti Deka (Male)	• **Stove ID:** UDL 4781	28-September-2019
10		**End User Name:** Bilashree Boro (Male)	• **Stove ID:** UDL 2587	08-December-2019
11		**End User Name:** Putuli Kalita (Female)	• **Stove ID:** UDL 1745	10-November-2019

Apart from the monitoring survey, VVB has also interviewed the end users in order to confirm the usage of baseline cookstove (i.e, Three stone fire) prior to implementation of the project stove. Furthermore, through document review and end user agreement signed by the household/18/, Assessment team (AT) could verify that the installed cookstoves replace baseline cookstoves (based on sampling plan applied which is explained in section 2.4 below). This complies with the requirements of methodology to use efficiency of at least 20% or above as per the manufacturer's specification in the applied methodology.

[1] Beneficiary is illiterate so his son signed on behalf of his mother.

2.4 Site Visits

Site Location visited: District Baksa, Udalguri and Barpeta of state Assam, country India.

VKU audit team have conducted an on-site inspection on **25-November-2023 to 27-November-2023** following sampling approach as explained below:

PP's sampling approach:

PP has proposed simple random sampling plan using 90/10 as confidence/precision. This is in line with the applied methodology/12/ and the registered monitoring plan/3/ and CDM Guideline: "Sampling and surveys for CDM project activities and programme of activities", version 04.0/16/ to aim at higher confidence/precision when the sampling/survey effort is undertaken less frequently.

The project activity has been treated as single frame and 90/10 confidence/precision has been considered for annual sampling. This approach has been confirmed with the MR/1/, ER sheet/2/& sampling survey sheet/23/ submitted by PP, hence accepted by VKU assessment team. The sample size for each parameter is determined following guidelines in Appendix 2 Para 15 for Sampling and Surveys for CDM Project activities and Programme of Activities Version 4.0 (EB86, Annex 4)/16/ and registered monitoring plan/3/. The monitoring parameter(s) monitored through the sampling plan are:

(a) Number of project devices of type i and batch j operating during year y ($N_{y,i,j}$).

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

Development of the Audit Plan (including Sampling Plan):

The audit team has formally documented its verification/ sampling plan as well as determined the evidence-gathering plan. The verification plan is developed based on key elements of the verification process as per the criteria of engagement. The plan identifies and addresses the following:

a) Level of Assurance

b) Materiality

c) Standards of evaluation & reporting for the verification including the assessment criteria

d) Scope and objectives

e) Assessment team and the roles of team members

f) Schedule of verification activities

Verification Approaches-

a) ASP: Acceptance Sampling

b) SPL: Sampling Approach

c) CDC: Complete data check of data including all data aggregation steps

d) COM: Full data check at higher data aggregation levels and sampling at original data levels document the rationale for the decision.

Audit Plan (including Sampling Plan) :-

To ensure a comprehensive, transparent, and timely execution of the assessment task, the team leader has carefully crafted a detailed sequence of events that encompasses all the necessary steps to arrive at a substantiated final opinion. This meticulous planning allows for a systematic and organized approach to the assessment, ensuring that no crucial aspects are overlooked or neglected. In addition to the structured sequence of events, the team has implemented tool/15/ and methodology/12/ and the sampling standards/17/ and guideline/16/. This tool serves as aids in gathering and analysing the required information, ensuring the effectiveness and accuracy of the assessment. This approach guarantees that all relevant factors are taken into consideration and that the assessment is conducted in a rigorous and objective manner

Table no.08: Step 1- Identification of Materiality threshold

Check the relevant box against applicable threshold level	Threshold as per Section 4.1.10 of version 4.5 of 11-December-2023/8/	Related to

☒	5 %	Quantitative materiality, as per reporting standards, dictates that the threshold for materiality concerning the aggregate of errors, omissions, and misrepresentations, either individually or in combination, for any reported value in relation to total reported GHG emission reductions and/or removals assets, should not exceed five percent. In other words, discrepancies below this five percent threshold are considered immaterial and do not significantly impact the overall reporting accuracy. The verification of the stated materiality threshold is conducted through the PP's sampling survey and the acceptance sampling performed by the assessment team during site visit. Based on these findings, the reported results were accepted as valid and in compliance with the established materiality criteria of section 2.3 of VCS Validation and Verification Manual /9/.

Table no.09: Step 2- Identification of risks, their level and assessment

S. No.	Risk that could lead to material errors, omissions or misstatements	Assessment of the potential risk		Assessment of the records/information/interview with personnel to check controls/ mitigation measures
		Risk level	Potential actions causing risk	
1.	Monitoring parameter	High	Monitoring not done as per the registered PD	The risk will be mitigated by reviewing the claims in the VCS Joint PD&MR/3/, Monitoring Plan and its assessment based on VCS requirements. The plausibility of the related monitoring parameter can be further

				cross-checked with the project specific evidence, related to the host country/region and interviews with the related stakeholders (end users/beneficiaries). Interviews conducted by Verification team with on ground team & end users also confirmed that the monitoring procedures were in line with the registered monitoring plan in VCS Joint PD&MR/3/.
1.a	Sampling	High	Sampling guidelines and standard may not be followed by PP, which in turn can lead to discrepancy in the number of samples.	The risk is mitigated by reviewing the Sampling Survey sheet/23/. The formulas applied were verified with the Sampling standard and guideline. The sampling was found appropriate as per the CDM sampling standard/17/ para 30 & 31 as well as VKU's internal guidance on sampling. VKU assessment team also conducted the onsite interviews with the end-users for 11 ICS samples to mitigate any risk. Hence VVB finds the risk to be mitigated to a reasonable degree as much as it is allowed by the CDM standard and guidelines on sampling/17//16/. In case the desired precision is not met then as per CDM SSC guidelines para 18, as follows: Discounting ER estimates by • Taking lower/upper bound of 90/95

				confidence interval (as the case maybe)
1.b	Emission Reductions	High	Discrepancy in estimated emission reductions and achieved emission reductions	The risk is mitigated by reviewing the MR/1/, ER sheet /2/ and Registered VCS PD&MR/3/, Validation & Verification report/5/. It is observed that achieved emission reductions are lower (-32.07%) in comparison to the one estimated in registered VCS-PD. The shortfall in emission reductions is attributed to the lower distribution of ICS & also due to drop in efficiency of ICS over the vintages. However, by assessing the robustness of the monitoring system at site through interviews, document reviews, it is assessed that there is limited scope in overestimation. This is based on the precision levels achieved which are lower than the expected values.
2.	Project description: Information on project description: without adequate controls related to data, evidences (project/sector related)	High	Project description: incorrectly described thus leading to incorrect delineation of the baseline scenario, causal change, threats to the project	The risk will be mitigated by reviewing the claims in the VCS Joint PD&MR/3/and its assessment based on VCS requirements. The background documents including monitoring survey report/28/shall be cross-checked with the project specific evidence, related to the host country/region and interviews/30/ with the related stakeholders.

				Assessment Team confirms that usage of default value of Leakage factor 0.95 is in accordance with methodology/12/.
3.	Accuracy of the monitoring survey	Medium	Inadequately delineated monitoring plan may lead non-compliance of the clause 3.16.3, and 3.16.4 of VCS standard version 4.5 of 11-December-2023/8/.	To mitigate the risk associated with the accuracy of the monitoring plan, several measures were taken. These include: 1. Reviewing the monitoring survey report /28/and the VCS Joint Project Description (PD) & Monitoring Report (MR) /3/. This review will assess the alignment of the monitoring plan with the reported data and claims, ensuring consistency and accuracy. 2. Ensuring compliance with VCS requirements. The monitoring plan was evaluated to ensure that it meets the standards and guidelines set by VCS. 3. Assessing the applied sampling too. The appropriateness and effectiveness of the sampling methodology used in the monitoring plan

				has been examined to ensure reliable and representative data collection. 4. Conducting onsite interviews with the Project Proponent (PP), their associates, and end-users. These interviews provided an opportunity to verify the feasibility and appropriateness of the monitoring plan. Feedback from stakeholders involved in the project helped AT validate the accuracy of the data collected and the effectiveness of the monitoring procedures. By implementing these measures, the project can mitigate the risk associated with the accuracy of the monitoring plan and ensure that the reported data and claims are reliable and consistent with the established standard guidelines and requirement under para 18 of CDM Standard: Sampling and surveys for CDM project activities and programmes of activities, Version 09.0/17/.
4.	Competence of personnel involved	Medium	Interview of the personnel	The risks have been mitigated by reviewing the training

	in conducting monitoring like surveys		involved and check the training records conducting such monitoring.	records of the personnels in conducting such surveys and by following the monitoring responsibilities. The training records have been be reviewed and confirmed during the interviews/34/.

Sampling Plan:

Where, due to the distribution of large amount of cookstoves in the project activity, it is unreasonable to undertake an individual assessment of each ICS. To overcome this, the validation/verification body shall document and explain the sampling methods employed for the verification of such ICS. Such sampling methods shall be statistically sound. The number of ICS included in the project, eligible for monitoring and generation of VCUs shall be proportional to the percentage of sampled ICS found to be in compliance by the validation/verification body.

☐	No sampling approach has been used by the VVB to verify the project's compliance with SD Vista requirements.
☒	A sampling approach has been applied by the VVB to verify the project's compliance with VCS requirements for the aspects derived in step 2 above. The statistical approach of sample size (i.e., 11) calculation is provided below.

AS: Acceptance Sampling

Assessment team has applied a sampling approach for the onsite interviews as part of assessment in accordance with the paragraph 26 of the Standard: Sampling and surveys for CDM project activities and programmes of activities, Version 9.0/17/. In accordance with the paragraph 26 of the sampling standard, acceptance sampling has been chosen by the assessment team. Embracing the principles of precision and reliability, the team has consciously opted for acceptance sampling, a well-established technique that facilitates a systematic and representative sampling of project instances. By attentively adhering to these sampling guidelines, VKU's Assessment Team ensures a robust, accurate, and comprehensive assessment of the project activities. Thereby upholding the highest standards of evaluation.

From the PP's sampling survey sheet/23/, assessment team has opted for **AQL of 0.5 %** and **UQL of 20%; producer risk** of **10%** and **consumer risk** of **10%** as per VVBs professional judgement. Since India is a Moderately Developed Country and as per para 39 I of CDM standard/17/ consumer risk of 10% may be used and same has been applied by assessment team during acceptance sampling process and 10% producer risk is applied as per the precision of the PP and AQL is also kept as 0.5% and UQL 20%, hence **VVB's sample size of 11 ICS with acceptance number(c) as 0** is determined. This is also in line with **VKU's internal procedures i.e., VKU.F74A.Sampling Plan Method and Guidance/33/.** This is in line with the standard

requirement as per according to **para 30** and **para 39** of Standard: Sampling and surveys for CDM project activities and programme of activities version 9.0 /17/.

The sampling plan implemented by the PP is in accordance with the applied approved monitoring methodology/12/ and the VCS Joint PD &MR/3/. The PP has appropriately performed simple random Sampling procedure where reliability levels were set at 90% confidence and 10% precision in line with the applied methodology VMR0006 version 1/12/. Survey has been carried out. As the VCS Joint PD&MR /3/ mentions the option for simple random Sampling, so it was found appropriate to the Assessment Team. The sampling survey/26/ was carried out by the well-trained personnel. Further, preparedness for conducting survey was adequate and survey plan was robust. Further a brief description has been provided in section 4.4 of this report

Table no.10: Sample size and acceptance number based on AQL, UQL, and producer and consumer risks as per CDM Sampling and Survey Standard v09.0Para 30 and para 31/16/ selected by VKU assessment team for this project activity.

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

0.5%	15%	19	0	15	0	12	0	10	0
0.5%	20%	14	0	11	0	9	0	8	0
1.0%	10%	46	1	38	1	33	1	29	1
1.0%	15%	30	1	25	1	22	1	10	0
1.0%	20%	22	1	18	1	9	0	**8**	**0**

The stoves details (unique serial number, date of installation, type of ICS, name of user and address) were checked and found to be consistent with that reported in the installation ER Sheet/2/. No inconsistency was observed for any of the 11 samples (in total 11 ICSs as each household has 01 ICS) with respect to on-site inspection & document review. This assessment of the selected samples was done to ascertain the implementation status of the project activity w.r.t. the stove types, serial number, location, operation etc. of ICS and any continued use of baseline cookstove but no inconsistency was observed during site visit.

All the above stated information in this paragraph has been verified with the end user with the help of a questionnaire at the site attached in Appendix-B of this report/32/.

2.5 Resolution of Findings

VKU, during this verification, identified issues related to the monitoring, implementation or operation of the VCS project could impair the capacity of the e proposed VCS project to achieve project emission reductions or influence the reporting of emission reductions. CCIPL has identified, discussed these issues within the Verification report in Appendix B.

A corrective action request (CAR) is raised if one of the following occurs:

- Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- Mistakes have been made in applying assumptions, data or calculations of emissions reductions that will impair the estimate of emission reductions;
- Issues identified in a FAR during validation and verification to be verified during verification have not been resolved by the project proponents.

A clarification request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met.

A forward action request (FAR) is also raised in cases where any required deviation/information is not fulfilled in current verification and thus needs to be taken up in consequent verification for better transparency thus holding the applicability of the methodology eligible to the project activity and there is no impact of the same on additionality, baseline scenario & emission reduction calculation of project.

In summary, **the verification team identifies 04 CLs, 03 CARs and 00 FAR**. All CAR and CLs raised by VKU during this verification have been resolved successfully. The details for the same are given under Appendix C of this report.

2.5.1 Forward Action Requests

Based on the desk review of the validation and verification report/4/, previous verification report/5/, no FAR was found to be raised which needs to be closed during this verification. No FARs were raised in current monitoring period.

2.6 Eligibility for Validation Activities

VKU has not undertaken any validation activities as part of the verification and does not hold accreditation for validation of any relevant sectoral scope. Hence this section is not applicable. It is also to further conclude that during current verification there is no validation assessment undertaken either by VKU itself or parallelly by other certification bodies, as the same was confirmed with focussed group discussions /34/ and interview with the PP /30/ during onsite visit. Assessment team has also cross-checked the VERRA's website: https://verra.org/validation-verification/vku-certification-pvt-ltd/#vcs wherein the scope of services of VKU certification Pvt. Ltd. is mentioned as verification. VKU Certification Pvt. Ltd is currently undergoing validation accreditation with ANAB for which witness audit has already been conducted. Thus, ensuring that the accreditation details mentioned in FVR is consistent and correct.

3 VALIDATION FINDINGS

The project is already registered under VCS with reference number 2336. The Joint validation & verification were done by LGAI Technological Center, S.A. (Applus+ Certification) under VCS/4/. The second verification done by 4K Earth Services Private Limited under VCS from 28-June-2020 to 31-March-2022 (inclusive of both dates). The fixed crediting period is from **28-June-2019 to 27-June-2029** (inclusive of both dates). This verification assessment is for the 3rd monitoring period from **01-April-2022 to 27-June-2023 (inclusive of both dates).**

3.1 Participation under Other GHG Programs

It has been confirmed through the description in Joint PD&MR /3/, previous verification report/4/ and through interviews/30/ that the project activity does not participate in any emission trading program or any other GHG program and has not sought or received any other form of environmental credit. This was confirmed based on both independent assessment and declaration submitted by PP/19/. The project has applied only under VCS for registration and in

order to ensure that emission reduction generated from the project activity will not be double counted Assessment Team cross checked the following registries to confirm the same.

Table 11: Registry details

S.No.	Registry
1	GCC PROJECTS PORTAL (globalcarboncouncil.com)
2	International Carbon Registry
3	https://www.ucarbonregistry.io/
4	Carbon Registry-India
5	http://cdm.unfccc.int/
6	Bio Carbon registry (https://biocarbonregistry.com/en/projects/)
7	Social Carbon registry (https://wilder.earth/social_carbon)
8	Cercarbono registry (https://www.ecoregistry.io/)
9	http://www.goldstandard.org/

Rejection by other GHG programs

The Project is not rejected by other GHG programs. Assessment Team as part of double counting diligence explained above, also checked for rejection by any other registries to confirm the same. The details of the registries are mentioned in Table no.11.

Hence, based on the aforementioned statements, it can be concluded that the project meets the requirements to participate in the VCS Program.

3.2 Methodology Deviations

There is no methodology deviation identified during the current monitoring period from **01-April-2022 to 27-June-2023** (Inclusive of both dates). Also, no methodology deviations identified during the previous verification which was confirmed from the Joint validation & Verification report /4/ and previous verification report/5/.

3.3 Project Description Deviations

During the current monitoring period, one deviation is requested by PP:

Deviation - 01

The geo-coordinates of project activity were incorrect in PD&MR and previous verification report. So, in the current monitoring period, PP has requested for a deviation on geo-coordinates.

Previous geo-coordinates:

Latitude: 20.5937°N Longitude: 78.9629°E.

Current geo-coordinates -

State	District	Tehsil	Lat Long (Coordinates)
Assam	Baksa	Baksa	26°41'15"N, 91°36'06"E
		Goreswar	26°31'57"N, 91°43'46"E
		Jalah	26°39'22"N, 91°13'25"E
		Mushalpur	26°39'33"N, 91°20'27"E
		Rangia	26°26'49"N, 91°37'05"E
	Udalguri	Dalgaon	26°33'43"N, 92°12'00"E
		Dhekiajuli	26°41'54"N, 92°29'06"E
		Mazbat	26°47'34"N, 92°17'24"E
		Udalguri	26°44'45"N, 92°05'45"E
		Khoirabari	26°36'8"N, 91°49'02"E
		Kalaigaon	26°34'07"N, 91°58'31"E
		Harisinga	26°43'15"N, 91°59'26"E
	Barpeta	Baghbor	26°13'15"N, 90°50'57"E
		Bajali (pt)	26°32'39"N, 91°11'10"E
		Barn agar (pt)	26°29'47"N, 90°54'06"E
		Barpeta	26°19'46"N, 91°00'21"E

The same information regarding geo-coordinates has been verified during on-site visit using google map camera/29/ and this deviation doesn't impact the applicability of the methodology, additionality or the appropriateness of the baseline scenario. The applicability does not affect the monitoring as per Registered Monitoring Period as well.

3.4 Grouped Project

As per VCS Joint PD&MR version 06 dated 26-November-2021/3/, the project is not a grouped project. This can be further confirmed as per para 3.5.10 of version 4.5 of VCS Standard dated 11-December-2023/8/. Therefore, this section is not applicable.

4 VERIFICATION FINDINGS

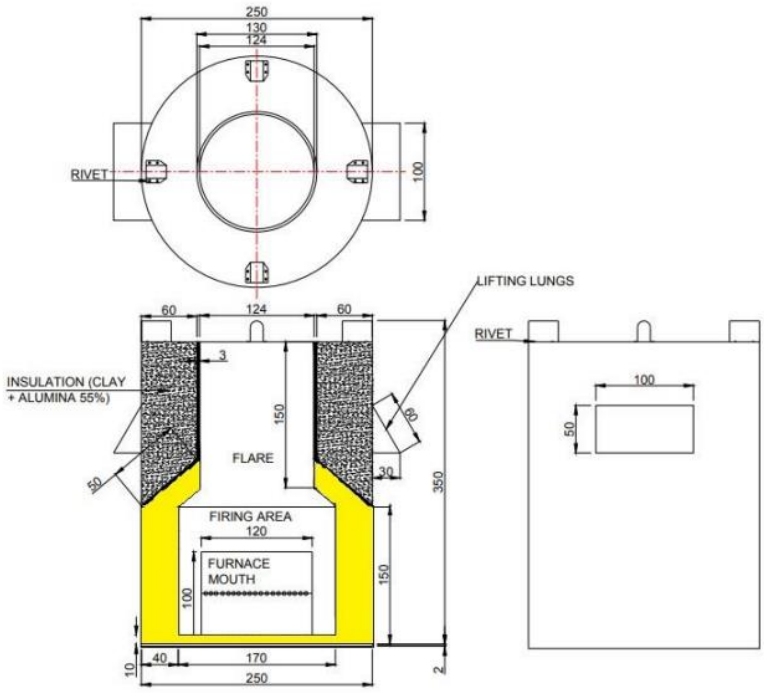
4.1 Project Implementation Status

The project "Energy Efficient Cook Stove Implementation in India "was commissioned on 28-June-2019 as the project activity completed the first installation of the ICS after beneficiary identification through a baseline level survey and the project is operational since then. The project activity has distributed ICS at the beneficiary's house for free of cost. The last ICS has been distributed on 10-January-2020 covering 17,379 households in 3 Districts: Baksa, Udalguri and Barpeta of state Assam, country-India. It has verified from the ER Sheet/2/ and Joint validation & Verification report/4/ and end user agreement/18/ and found to be accurate.

For this project activity, a total of 17,379 ICS have been distributed. PP has declared that no further distribution will occur under this project activity because of hard to locate nomadic beneficiaries and project financial constraints. However PP has confirmed that there is a plan to replace those ICS upon completion of their life span .

As verified from on-site assessment and monitoring results of PP, the audit team confirms the project implementation and operation complies with the registered VCS Joint PD&MR /3/. The purpose of the project is to disseminate efficient, improved cooking stoves (ICS) in rural households of Assam state of India. The improvement in thermal efficiency is achieved by properly designing the dimensions of the combustion chamber and ensuring effective air flow during cooking. The baseline cooking practice in Assam state of India is the use of the three-stone fire cooking, popularly known as conventional method using firewood. The project thus reduces greenhouse gas (GHG) emissions by replacing traditional wood-fuel by wood-fuel ICS. The replacement of conventional method by ICS improves heat transfer to the cooking utensil thereby reducing the amount of fuel (non-renewable biomass) required for cooking.

Figure showing the actual and representative Improved Cookstove:



A reduction in consumption of non-renewable biomass contributes towards reduction in GHG emissions into the atmosphere. Thus, ICS reduce GHG emissions through their improved thermal efficiency as compared to traditional/baseline stoves. This project is implemented by Greentech

Environment. Users have transferred the ownership of carbon credit via end user agreement /18/. All the end user agreement of all 11 sampled ICS have been verified by assessment team. The operational and management structure is verified from document review and on-site interviews/38/.Section 4.3 of the MR indicates roles and responsibilities for different participators which was cross verified through interviews during the onsite visit. The local team works under Greentech environment conducting ICS distribution, data collection, regular spot-checks and in gathering feedback, addressing any technical concerns. The verification team confirms that during the VCS project has disseminated 17,379 in 3 districts: Baksa, Udalguri and Barpeta of Assam State, India.

The ICS is named as GTW-M, "Green Tech Wood-based – Medium", which is a model name given to the ICS internally by the PP. It is promoted under the project having 5 years technical life and initial tested efficiency of ICS as 33.25 % although it is variable within different vintages **(Please refer Table no.03)** as per section 8.4 equation 4 of the applied methodology/12/. During 3rd monitoring period operational status of total 17,379 ICS were taken into consideration and monitoring survey confirmed a 100% operational rate (90/10- Confidence/Precision level). The operational rate was further confirmed by the section 9.2 of applied methodology, "Number of project devices of type i and batch j operating during year y ($N_{y,i,j}$) can be measured directly or based on representative sample."

PP had conducted the monitoring survey & submitted sampling spreadsheet by PP/17/. Survey had been conducted during the period of 03-July-2023 to 21-July-2023 in State of Assam, India. During the survey it was found that 100% project devices are in operation. During onsite visit of 11 selected samples, Assessment Team could confirm the availability and usage of ICS.

So, to measure $N_{y,i,j}$, and $B_{y=1,new,I,j,survey,}$ PP multiplied the achieved proportion with commissioned stoves that is 100% x 17,379= 17,379.

During the interviews /38/, verification, QA/QC procedures were identified which demonstrate that:

Operational and management system of the project is in place as verified through the site personnel interviews /30/ and document review of supporting documents listed in section 2.2; Monitored data were cross-checked with the supporting document provided by the PP. Employees employment & Training records /25//22/ in order to confirm ICS installation & ensures that all operational staff are trained before taking up positions. The verification team thus confirmed that the monitoring of the project activity has been implemented in accordance with the monitoring plan in the registered VCS Joint PD&MR/3/. The registered VCS Joint PD&MR/3/ clearly describes the monitoring and responsibility of the personnel involved in different stages and procedure.

During the interviews/30/, it was found that if the owners are unsuccessful in repairing their own stove, then they can contact the ground staff of PP/implementor over phone (phone number is provided to the stove owner upon stove registration) and the field staff notifies the implementer to provide the necessary assistance.

It is noted that no changes have been observed or identified during the onsite visit which may impact the additionality, no addition of component nor extension of technology, no addition nor removal of project sites, no change of values of the actual operational parameter relevant to determination of emission reductions which are within the control of the PP; No change has been observed or identified that may impact the scale of the project activity or applicability of baseline and monitoring methodology VMR0006 "Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1 /12/.

VKU's assessment team confirms that all the emission sources within the project boundary have been considered appropriately. Monitoring of all parameters during the monitoring period is followed as per registered monitoring plan in VCS Joint PD&MR/3/. The table below describes the data/parameters relevant to the monitoring plan.

Table no.12: Data parameters fixed ex-ante and available at validation are given below:

S. No	Data/parameter	Unit	Value applied	Assessment
1	Annual quantity of woody biomass that would have been used per person in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices. ($B_{old,p}$)	tonnes/person/year	0.5	This value has been verified by assessment team from Equation 3 of applied methodology VMR0006 version 01/12/.
2	Average number of persons per Household ($N_{p,HH}$)	No of persons/HH	4.6	This value has verified by assessment team from Latest National family Health Survey (NFHS-4) 2015-16.
3	Fraction of woody biomass saved by the project activity during year y that can be established	Fraction	74%	This value has been verified by assessment team from Fraction of non-renewable biomass is calculated as per the

	as non-renewable biomass ($f_{NRB,y}$)			f_{NRB} calculation TOOL 30: Calculation of the fraction of non-renewable biomass version 3/15/.
4	Net calorific value of the non-renewable woody biomass that is substituted ($NCV_{wood\ fuel}$)	TJ/tonne	0.0156	It is IPCC default value verified from 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 1 Introduction.
5	CO2 emission factor for the use of wood fuel in baseline scenario ($EF_{wf,\ CO2}$)	tCO2/TJ	112	It is IPCC default value verified from 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion.
6	Non-CO2 emission factor for the use of wood fuel in baseline scenario ($EF_{wf,\ non\text{-}CO2}$)	tCO2/TJ	26.23	It is IPCC default value verified from 2006 IPCC Guidelines for National Greenhouse Gas Inventories; Volume 2 Energy, Chapter 2 Stationary Combustion.
7	Efficiency of baseline cookstove (η_{old})	Fraction	0.1	The default value of 0.1 is used as the replaced system is a three stone fire, or a conventional device with no improved combustion air supply or flue gas ventilation, i.e., without a grate or a chimney.

8	Efficiency of the project stove at the start of project activity (η_p)	Fraction	0.3325	This value is verified from Manufacturer's specification/20/.

Table no.13: Data and parameters monitored

Parameter	Unit	Value	Description/Assessment
Number of project devices of type i and batch j operating during year y ($N_{y,i,j}$)	Number	17,379	From the total commissioned ICS, PP has conducted the sample survey in line with monitoring plan and sampling and survey guidelines covering the project has implemented around 17,379 stoves in Baksa, Udalguri and Barpeta districts of Assam state in India. A sample survey of 135 households has been collected whereas required sample was 118. (as each household has 1 ICS) which were found 100% operational by the PP. The sample size estimations by PP follows Appendix 2 of Guideline for Sampling and surveys for CDM project activities and programmes of activities, version 04.0/16/. According to the section 9.2 of applied methodology, "Number of project devices of type i and batch j operating during year y ($N_{y,i,j}$) can be measured directly or based on representative sample." VKU's assessment team has applied acceptance sampling approach according to CDM sampling standard/16/ and interviewed 11 beneficiaries as each beneficiary has 1 cookstove. During the site visit/39/, VKU confirmed with the beneficiary whether or not the PP has performed monitoring/measurement campaign, survey on stove operation (for the parameter $N_{,y,i,j}$) and usage of baseline

			cookstove. The verification team also interviewed end users on baseline scenario of the household and enquired the pre-project/baseline stove/s and its operation during the project scenario. The verification team also assessed Competence of personnel involved in conducting monitoring. Hence, VKU verification team verified taking 11 samples and verified 11 ICS samples in total and all samples were found operational. Hence reported results are accepted.
Efficiency of the improved cookstove type i and batch j determined through water boiling test (WBT) during year y ($\eta_{new,y,i,j}$)	Fraction	For Vintage 1: 33.25% For Vintage 2: 30.94% For Vintage 3: 30.63% For Vintage 4: 30.33% For Vintage 5: 30.02%	This parameter has been calculated initially at the time of distribution based on WBT test conducted by PP on randomly selected Households from the database, selected as per sampling size calculation. Such WBT is conducted after commissioning/distribution of ICS, in order to estimate the operational efficiency of ICS for the 1st year of operation. The value has been considered as ex-ante fixed for same ICS type for the year 1 which can be confirmed with the WBT report submitted during validation and further yearly loss in efficiency of ICS is calculated as per equation 5 of the applied methodology, VMR0006 Version-1/12/ and respective vintage wise efficiencies have been determined. This is in line with the methodology and registered VCS Joint PD&MR/3/. Hence deemed satisfactory to VKU's assessment team.
Adjustment to account for any continued use of pre-project devices during the year y (μ_y)	Fraction	0.0025	This parameter should be monitored using one of the following methods: If the baseline cookstoves are decommissioned and no longer used, as determined by the monitoring survey its value is 0 and $B_{old,\ adjusted}$ is equal to B_{old}. If both the improved cookstove and baseline cookstoves are used

			together then surveys shall be conducted to record the average continued operation of baseline cookstoves in a sample of households. The surveys have been designed to capture the cooking habits and stove usage of households in the region, including quantification of use of baseline cookstoves, by formulating questions and/or collecting evidences to determine the frequency of usage of both the improved cookstoves and baseline cookstoves. For example, if there were 3 baselines cookstoves in a household and it was determined during the survey that uses of one of them continues during the crediting period then a conservative adjustment factor of 0.33 is applied to B_{old}. Another example would be the case where there was only one baseline cookstove per household and its use during the project period continues along with the improved cookstove to meet 25% of the cooking needs of the household in which case the adjustment factor will be 0.25. Another example would be to interview the household and have them estimate the time of usage of the baseline cookstoves and improved cookstove on an average day.
The operating lifetime of the project device. The life span should be reported if the methodology equation 5 is adopted to determine the project stove efficiency (Life Span)	Number of Years	5	This parameter has been calculated based on the ICS Lifespan certificate and the calculated lifespan of ICS is 5 years.

Assessment team concludes the following:

- There are no material discrepancies between project implementation and the project description found in current monitoring period.
- The monitoring plan is implemented completely and monitoring system (i.e., process and schedule for obtaining, recording, compiling and analyzing the monitored data and parameters) is appropriate.
- There are no material discrepancies between the actual monitoring system, and the monitoring plan set out in the project description and the applied methodology/12/.
- The project has not received or sought any other form of environmental credit, or has become eligible to do so since validation.
- The GHG emission reductions or removals generated by the project have not been included in any emissions trading program or any other mechanism that includes GHG allowance trading/12/.
- According to VCS Standard 4.5/8/, specific guidelines are applicable when the producer(s) or retailer(s) of the impacted good or service are identified but not involved in the project or do not possess a website. The distribution agent has been informed by the Project Proponent (PP) that Verified Carbon Units (VCUs) may be issued for the greenhouse gas emission reductions and removals achieved through this grouped project. The PP intends to claim carbon credits under VERRA. To support the current project verification, the PP has submitted evidence in the form of self declaration/19/
- The project activity complies with six indicators for sustainable development in the interim approval guidelines for Clean Development Mechanism (CDM) projects from India as discussed under section 1.11 of MR /1/. Assessment team has verified the same during on site visit/30/ and found all the indicators to be applicable for the project activity. SDG Indicators taken by PP for the whole lifeline of the project is applicable to all the monitoring periods of the project. SDGs during current monitoring period are-

  - ✓ **1.2.1 i.e. (Proportion of population living below the national poverty line, by sex and age)** The contributions during the current monitoring period are counted based on the project which has uplifted 146 underprivileged local youth from poverty by providing them employment for the installation of improved cookstoves, its maintenance and monitoring purpose. And same information is verified from supporting documents. Hence these claims are acceptable by VKU verification team.
  - ✓ **2.3.1 i.e. (Volume of production per labour unit by classes of farming/pastoral/forestry enterprise size)** The contributions during the current monitoring period are counted based on the project which has reduced cooking time by 50% by installing ICS in households. Now women can partake in agricultural activities and help increase the productivity.

- ✓ **3.9.1 i.e. (Mortality rate attributed to household and ambient air pollution)** The project has created a positive impact to 17,379 households included under the project activity which contribute significant reduction in incidents eye itching and coughing due to negligible ambient smoke. This information is verified from supporting document (Survey Form). Hence these claims are acceptable by Assessment Team.
- ✓ **7.1.2 i.e. (Proportion of population with primary reliance on clean fuels and technology)** Provided 17,379 families with low-cost ICS which uses notably less fuel than traditional cookstoves. Families have access to clean technology of "ICS" which is an energy efficient cooking device that reduces the consumption of non-renewable biomass in the region. Assessment team verified the same and found it to be true via interviews with end users, conducted during on-site visit and cross checking the supporting document.
- ✓ **8.6.1 i.e. (Proportion of youth (aged 15–24 years) not in education, employment or training)** Provided skill development training and income opportunities to 226 and 146 number of local populations respectively till the end of current monitoring period. This information has been cross checked & verified by assessment team through training details provided by PP/22/ which is acceptable by VKU verification team.
- ✓ **13.2.2 i.e. (Total greenhouse gas emissions per year)** Achieved reduction of 50,099 tCO_2e emissions during the current monitoring period as verified from the MR/1/ and ER sheet /2/ and other supporting documents to verify the claim hance accepted by VKU assessment team.

Since this is the third verification under VCS the SDG claims made under current contributions are equivalent to the overall project contributions.

In view of the information as verified above the assessment team is able to conclude that the project has been implemented as described in the registered VCS Joint PD&MR/3/. All the above stated information was verified by VVB during onsite visit/30/ and site personnel interviews /30/.

Audit Type	Monitoring Period	Program	VVB Name	Number of years	VCUs Issued	Conclusion
Validation & Verification	28-June-2019 to 27-June-2020 (includes both dates)	VCS	Applus+ Certification	1 year 0 months	33,439 tCO_2e	The validation and verification conducted by Applus+ Certification was concluded on 26- November -2021.
Verification	28-June-2020 to 31-March 2022 (includes both dates)	VCS	4K Earth Science Private Limited	1 year 9 Months and 4 days	71,360 tCO_2e	The verification conducted by 4K Earth Science Private Limited was concluded on 18-November-2022.
Verification	01-April-2022 to 27-June-2023 (includes both dates)	VCS	VKU Certification Pvt. Ltd.	1 year 2 Months and 27 days	50,099 tCO_2e	The verification conducted by VKU Certification is concluded on 28-February-2024.
Total	(28-June-2019 to 27-June-2023)	-	-	4 Years 0 months 0 days	-	-

Table no.14: Assessment of the audit history is presented above.

4.2 Safeguards

4.2.1 No Net Harm

The project involves use of improved cooking stove in households replacing conventional cooking stoves. Therefore, the project results in avoidance of CO_2 emissions due to improvement in efficiency as verified from the manufacturer's specification /20/. Therefore, there is no negative environmental impact from the project activity which has improved socio-economic impacts in the project area. The project is neither involved in any activity that would bring environmental deterioration nor will lead to any emission of toxic substances. The project stoves will rather reduce emissions due to the increased thermal efficiency compared to the baseline stoves. Any leakage is accounted in the Methodology VMR0006 Version 1 /12/. Leakage is considered as default 0.95 in accordance with methodology/12/. The project has positively impacted the local community by reducing the indoor pollution and pollutants (PM 2.5) and increase in financial independence. Some other socio-economic gains reported during the survey such as:

- Reduction in expenditure for fuel cost with ICS,
- Reduction in expenditure for medicines or doctor visits,
- Reduction in meal preparation time with ICS,
- Associated benefits as saving of time to carry out other along with ICS,
- Provisions of more avenues for income due to more time in daily life, tasks were gauged with household chiefs.
- Direct health benefits due to reduction in smoke and improvement in indoor air quality.

Therefore, there is no net harm from the project activity and the project positively impact the local community.

4.2.2 Local Stakeholder Consultation

Local stakeholder consultation is not applicable for the project proponent during verification. PP organized stakeholder consultation during Joint validation & verification/4/ of the project activity which was validated by Applus+ Certification. The verification team has interacted with local stakeholders during on-site assessment/39/ and details are summarized in section 2.3 of this report. There was no negative comment or feedback from local stakeholders as recorded by the verification team.

The local implementation partners as well as PP have the responsibility to take grievances regarding the project activity and same will be conveyed to PP during operation of project activity. Thus, ongoing communication of stakeholders is followed through grievance mechanism.

The Project Proponent has reported its feedback and grievance redressal procedure in Section 2.2 of the MR/1/. In the opinion of verification team, based on interviews/30/ and observations, the grievance redressal procedure will address issues that may arise during project planning and implementation and operation. The grievance redressal process has been designed where users can record their grievance on the register present at local supplier or village heads or via phone calls (on the contact no. which was provided during the ICS distribution) from all villages involved in project activity from all 3 districts and this grievance is directly taken care by project participants. Assessment team confirms this is in accordance with VCS Standard.

During the interviews/30/ and based on document review, it can be confirmed that grievance addressal procedure has been designed and is implemented according to section 2.2 of the MR /1/ and that it is effective in its aim. There are no grievances/ feedback received during current monitoring period. This was also confirmed through grievance register which is provided by PP /22/.

The verification team confirms on the procedure and method for engagement, method for documenting the outcomes of local stakeholders' consultation and account of all inputs received. The verification team confirms that the project proponent has taken due account of all input/ feedback received during the monitoring process (positive or negative) have been compiled in the grievance records and in Section 2.2 of MR/1/, this has been checked by the verification team during the onsite interviews /38/. Hence the verification team found the local stakeholders ongoing communication as appropriate.

4.3 AFOLU-Specific Safeguards

The project is a non-AFOLU project,

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The equations and choices provided in the methodology/12/ and all other methodological tools are correctly quoted in the MR/1/. The emission reductions of the project activity are calculated using the formulae mentioned in the applied methodologies; VMR0006 version 01/12/. The verification team has reviewed the emission reduction spread sheet (ER sheet) /2/ and checked

all the formulae and found they are correct and are in accordance with the monitoring plan of the VCS Joint PD&MR /3/ and the applied monitoring methodology /12/.
According to applied methodology VMR0006 (version 01) /12/ the emissions are calculated as below:

Baseline Emission:

$$ERy = \Sigma i\ \Sigma j\ ER_{y,i,j} - LE_y \qquad \text{Equation (1)}$$

Where:

i	=	Indices for the situation where more than one type of project device is introduced to replace the pre-project devices.
j	=	Indices for the situation where there is more than one batch of project device
ER_y	=	Emission reductions during year y in t CO_2e
$ER_{y,i,j}$	=	Emission reductions by project device of type i and batch j during year y in t CO2e
LE_y	=	Leakage emissions in the year y

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

Where:

$B_{y,savings,i,j}$	=	Quantity of woody biomass that is saved in tonnes per improved cookstove of type i and batch j during year y
$f_{NRB,y}$	=	Fraction of woody biomass that can be established as non-renewable biomass (f_{NRB})
NCV wood fuel	=	Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne, based on the gross weight of the wood that is 'air-dried')
$EF_{wf,CO2}$	=	CO2 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

To calculate $B_{y,savingsi,j}$,

The quantity of woody biomass saved due to implementation of improved cookstoves to be estimated using equation 3 of the applied methodology[2] below:

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

Where;

B_{old}	Annual quantity of woody biomass that would have been used in the absence of the project activity (in tonnes per device) to generate useful thermal energy equivalent to that provided by the improved cook stove. The value of B_{old} can be sourced from historical data or baseline surveys. Alternatively, a default value of 0.5 t/capita/year may be used
η_{old}	Efficiency of baseline cookstove
$\eta_{new,i,j}$	Efficiency of the improved cookstove type i and batch j determined through water boiling test (WBT) during year y Alternatively, efficiency may be determined using Equation 5.

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

Where;

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

As per survey result μ = 0.0025 therefore, $B_{old\ adjusted}$:

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

Where:

[2] https://verra.org/wp-content/uploads/VMR0006-Methodology-for-Installation-of-High-Efficiency-Firewood-Cookstovev-v1.0.pdf

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

μ_y = Baseline stove usage factor to account for use of baseline cookstoves along with improved cookstoves

The quantity of firewood consumed in absence of project activity ***(B_{old})*** is determined by using an estimation of average annual consumption of firewood per household by following:

$$\boldsymbol{B_{old,i,j} = B_{old,HH} \div N_{d,HH}}$$

$$\boldsymbol{B_{old,HH} = B_{old,p} \times N_{p,HH}}$$

Where;

$B_{old,HH}$ = Annual quantity of woody biomass that would have been used in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices (tonnes/household/year)

$N_{d,HH}$ = Number of project devices per household

$B_{old,p}$ = Annual quantity of woody biomass that would have been used per person in the household in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project devices (tonnes/person/year)

$N_{p,HH}$ = Average number of households

Sampling approach: -

As assessed in this section, emission reductions for the project "Energy Efficient Cook Stove Implementation in India" are being claimed for this monitoring period and the total population of the stoves for the current monitoring period i.e., 01-April-2022 to 27-June-2023 (inclusive of both dates) is 17,379 ICS.

The sampling plan implemented by the PP is in accordance with the applied approved monitoring methodology/12/ and the VCS Joint PD&MR/3/. The PP has appropriately performed Simple random Sampling procedure, reliability levels were set at 90% confidence and 10% precision in line with the applied methodology VMR0006 version 1/12/ and Guideline: "Sampling and Surveys for CDM Project Activities and Programme of Activities", version 04/16/. The VCS Joint PD&MR/3/ mentions the option for Simple random Sampling, so it was found appropriate to the verification team.

The sampling surveys have been carried out by the well-trained personnel. Further, preparedness for conducting survey was adequate and survey plan was robust. Monitoring parameters $N_{y,l,j}$ and $B_{y=1,new,l,j,survey}$ was monitored through monitoring sample surveys. Monitoring of the parameters ensures compliance with the applied methodology VMR0006 version 1/12/. Verification team has checked the survey records and sample size calculation/26/ by PP through desk review and interview with the personnels responsible for doing the survey and reporting during site visit. Parameter $N_{y,j,j}$ monitors the number of stove in operation and $B_{y=1,new,l,j,survey}$ monitors and any adjustment to account for any continued use of pre-project devices during the year y.

As per applied methodology the value of these two parameters ($N_{y,l,j}$ and $B_{y=1,new,l,j,survey}$) in the table below:

PP has provided the detailed sample size calculation under section 4.3 of the MR/1/

Definition	Value	Justification
The population size N is	Total:17,379	Number of stoves registered in database
The expected proportion p for $n_{y,i,j}$ is	0.9	A conservative assumption of 90% is applied for sample size
Sample size	45*3= 135[3]	Calculated
Sample size / District (Rounded up)	45	Calculated

S. No.	District	Number of Households Surveyed
1.	Baksa	45
2.	Udalguri	45
3.	Barpeta	45

[3] As the project has implemented around 17,379 stoves in Baksa, Udalguri and Barpeta district of Assam state in India, a sample survey of 135 households has been collected whereas required sample was 118.where 45 samples per district has been sampled.

The survey team discovered that all 135 beneficiaries continued to use the improved cookstove (ICS) and reported a reduction in eye irritation and coughing caused by smoke. However, the survey team observed that one beneficiary occasionally used a traditional cookstove for one meal alongside the ICS. To adopt a more conservative approach, the survey team treated this usage as regular and excluded it from the emissions reduction (ER) calculation.

VVB Assessment on expected proportion of Cookstoves in Operation: The PP used the conservative expected proportions to calculate sample sizes, as required by the methodology outlined in the VCS Joint PD & MR. The survey data shows that 100% of ICS were operational in all districts, which is higher than the assumed conservative proportions (0.78 for Baksa, 0.59 for Udalguri, and 0.71 for Barpeta). These assumed proportions appear to have been set conservatively and the actual field data now validates that the ICS usage rate exceeds these assumptions.

The inclusion of a conservative expected proportion (lower than actual usage) ensures that any variability in the operational status of ICS over time does not overstate the emissions reductions. This aligns with the principle of conservativeness in calculation of emissions reductions.

The above table mentions the sample size calculated applying the formula;

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

Where:

$$V = \left(\frac{SD}{p}\right)^2$$

n = Sample size

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

P = Weighted overall expected portion

SD^2 = Weighted overall expected variance

1.645 = Represents the 90% confidence required

0.1 = Represents the 10% relative precision

District	No. of cookstove device distributed	Proportion of cookstove in operational
Baksa	5779	0.78
Udalguri	5845	0.59
Barpeta	5755	0.71

$$SD^2 = \frac{5779 \times 0.78 \times (1 - 0.78) + 5845 \times 0.59 \times (1 - 0.59) + 5755 \times 0.71 \times (1 - 0.71)}{17379}$$

$$SD^2 = 0.2066$$

$$\bar{P} = \frac{5779 \times 0.78 + 5845 \times 0.59 + 5755 \times 0.71}{17379}$$

$$\bar{P} = 0.69$$

$$V = \frac{0.2066}{0.69^2}$$

$$V = 0.430$$

$$n \geq \frac{1.645^2 \times 17379 \times 0.43}{(17379 - 1) \times 0.1^2 + 1.645^2 \times 0.43}$$

$$n \geq \frac{20236.14}{173.78 + 1.1636}$$

$$n \geq 115.67 \approx 116$$

Sample size per district

$$Baksa = \frac{5779}{17379} \times 116 = 38.57 \approx 39$$

$$Udalguri = \frac{5845}{17379} \times 116 = 39.01 \approx 40$$

$$Barpeta = \frac{5755}{17379} \times 116 = 38.41 \approx 39$$

However, as per the sampling Guideline: Sampling and surveys for CDM project activities and programmes of activities version 04 /16/, Appendix 2, § 15

Retention rate of improved cookstove (proportion parameter) –

“The required sample size for this parameter is dependent on:

(a) The expected value of the proportion parameter;

(b) The level of precision and confidence in that precision (90/10 reliability criterion).

Based on the expected proportion mentioned in the Section 5.3 of VCS PD & MR, it is considered as 0.78 for Baksa District, 0.59 for Udalguri District and 0.71 for Barpeta District. The same expected proportion was considered during this monitoring period. Since the ICS are assumed to be homogeneous with respect to the retention rate of improved cookstove.
In the registered VCS Joint PD&MR /3/, section 5.3, the expected proportion value was assumed to be 0.78 for Baksa District, 0.59 for Udalguri District and 0.71 for Barpeta District expecting that

the above mentioned proportion of the ICS still in operation (was just an example to show how PP will calculate the sample size using the formula mentioned in VCS Joint PD&MR/3/). Although this is the third MP under VCS, according to that verification report and current monitoring period site visit of the 11 samples, assessment team concludes that 100% of cookstoves were working. However, for the sake of conservativeness above mentioned % of ICS was assumed to be working in the calculation of samples. Hence, during this MP verification, different proportions for all districts has been chosen as proportional parameter by PP, considering that proportion of ICS will be operational.

The confidence /precision level specified for small scale project as per methodology/12/ is 90/10 but PP has chosen confidence of 90/10 which is the confidence/precision levels hence the assumption of 0.78 for Baksa District, 0.59 for Udalguri District and 0.71 for Barpeta District is a more conservative approach as per the VCS Joint PD & MR under VCS and sampling conducted by PP. PP has taken 0.78 for Baksa District, 0.59 for Udalguri District and 0.71 for Barpeta District ICS to be operational, although as found from the actual sampling survey conducted by the PP, 100% of ICS were operational. Hence, the rejection level is under 10% and within the limits. Sample size, thus arrived, meets the relative precision error i.e., under 10% (please refer ER calculation spreadsheet /2/ and Sampling survey sheet/23/ for calculation reference). However, actual proportion of ICS in operation is observed as 100% during the 3rd MP verification considering 0.78 for Baksa District, 0.59 for Udalguri District and 0.71 for Barpeta District as expected proportion is conservative on PP's side.

According to the section 9.2 of applied methodology, "Number of project devices of type i and batch j operating during year y ($N_{y,i,j}$) can be measured directly or based on representative sample."

PP had conducted the monitoring survey from 03-July-2023 to 21-July-2023 of 135 households in Assam. During the survey it was found that 100% project devices are in operational, and this was further confirmed by the Verification team from the submitted sampling survey sheet and photographs from the survey. Assessment team conducted acceptance sampling based on the sampling survey sheet/23/ submitted by the PP.

So, to measure $N_{y,i,j}$ and $B_{y=1,new,I,j,survey;}$;PP multiplied the achieved proportion with commissioned stoves that is 100% x 17,379= 17,379

Hence, the verification team found it is in line with the sampling guideline and VCS Joint PD&MR/3/ found the sampling approach conservative and appropriate, based on the provisions of the sampling guideline and the same has been updated in section 4.4 of the FVR.

VVB used acceptance sampling during verification for checking the operational status in the households. The sampling done by Verification team represents the population of the project activity. Applying paragraph 39 (c) of the sampling standard, version 09 /17/, a sample size of 11 ICS was chosen (with no discrepant records). A sample size of 08 was determined, based on an **AQL of 0.5 % and UQL of 20%; producer risk of 10%** and consumer risk of 10% Acceptance number (c) thus determined for the sample is 0 in line with **para 30 and 39** of CDM Standard "Sampling and Surveys for CDM project activities and programme of activities" version 09.0/17/. It is also in line with VKU's Internal Procedures/33/. Verification team inspected 11 samples and in total-11 ICS samples (since each household has 1 ICS, from monitoring survey). It was observed that out of the 11 ICS samples, all the 11 ICS were found to be operational and this matched with the PP's records and hence no discrepant records were observed with the MR /1/ and ER spreadsheet /2/

and thus c=0. Thus, PP's set of records has been accepted in line with para 33 of the sampling standard, version 09 /17/. Verification team has cross verified these sample documents.

The monitoring parameters to be monitored through the sampling plan is:

1. Number of project devices operating during year y ($N_{y,J,J}$)
2. Adjustment to account for any continued use of pre-pre-project devices during the year y ($B_{y=1,new,I,j,survey}$)

Simple random sampling was applied by the PP for selection of the monitoring samples with 90/10 confidence/precision for determining the sampling for all the parameters which is deemed acceptable as per the VCS Joint PD&MR/3/. 90/10 is the confidence/precision applied by PP.

Furthermore, the database was also checked/cross verified to confirm the number cookstove for the parameter $N_{,y,i,j}$. and $B_{y=1,new,I,j,survey}$.

As per paragraph 25 of the Sampling Standard, version 09 /17/, the verification team has to verify whether the project participants entity have implemented the sampling and surveys according to the sampling plan in the registered monitoring plan. The verification includes determining:

(a) Whether the required confidence/precision has been met;

(b) Whether the selected sample was representative of the population.

As per the applied methodology VMR0006 version 1/12/, and registered VCS Joint PD&MR/3/ the necessary confidence / precision of 90/10 for the parameters have been met. 90/10 is a methodological choice and has been cross verified by the verification team from the supporting documents submitted including ER sheet/2/, sampling survey sheet/23/ and registered VCS Joint PD&MR/3/ and previous verification report/5/.

Emission reductions have been calculated in accordance with the applied methodology VMR0006. version 1 /12/, and VCS Joint PD&MR/3/. The PP has used monitored data and ex-ante fixed data including default values as mandated/permitted by the applied methodology. The values used for calculation of GHG emission reductions have been thoroughly checked by the verification team and was found appropriate and correct.

The full set of emission reductions calculation are provided in emission reduction spread sheet /2/. ER_y realized during the monitoring period is 50,099 tCO_2e which are 0.25% lower than the estimated emission reduction i.e., 50,224 tCO_2e for the current monitoring period. It was found in this monitoring period that 0.25% households were still using pre-project devices and it can be verified from the MR/1/, ER spreadsheet/2/ and Monitoring Survey Report/25/ provided by PP and assessed by the verification team as stated above.

The verification team has checked and confirmed the emission reduction calculations in the spreadsheet and found to be accurate. The monitoring report/1/ is supported by emission reduction spreadsheet/2/. The consistency and formula were verified and found to be accurate.

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

When verifying the reported emission reduction, VKU ensured that there was a clear audit trail that contained the evidence and records that validate the stated figures. All source documents that form the basis for assumptions and other information underlying the GHG data are shown above.

When assessing the audit trails, VKU also examined:

1. Whether sufficient evidence was available, both in terms of frequency and in covering the full monitoring period

2. The source and nature of the evidence

3. If comparable information was available from sources other than that used in the monitoring report/1/, VKU cross-checked the monitoring report against the other sources to confirm that the stated figures were correct. The sources and the data referenced are shown in Section 2.2 above.

All records needed for monitoring are archived in line with the requirements of the registered monitoring plan. No significant, lack of evidence and missing data were detected during verification. Hence, the verification team confirms that the monitoring system ensures required quality of the monitoring system to ensure the quality of the monitored data.
The operational status of project ICS is monitored through sample survey following CDM sampling and survey guideline version 4.0/16/ follows 90/10 confidence precision. 90/10 is a confidence/precision applied by PP as it is a more conservative approach as explained in section 4.4 above as per the applied methodology/12/ and registered sampling plan in registered VCS Joint PD&MR/3/. The survey forms were checked to ascertain the monitoring results reported in survey. For enhancing the survey reliability and QA/QC, training has been provided to the data collector during survey which was further verified from the training details provided by the PP. It is also noted the achieved precision is less than 10% and hence meets the desired confidence precision. The monitored results are found consistent with on-site audits.
Also, PP has set up grievance/repair/maintenance mechanisms/spot-checks/22/ and rectifies any issues for the operation of the project device.

So, VKU is of the opinion that the method of calculation of emission reductions is accurate and results in conservative estimation of emission reduction and is line with the applicable VCS requirements set out in section 3.15 of VCS Standard version 4.5/8/ and that the verification of the GHG statement was conducted in accordance with ISO 14064-3; 2019/36/.

4.6 Non-Permanence Risk Analysis

There is no non-permanence risk rating determined by the project proponent.

5 VERIFICATION OPINION

VKU Certification Pvt. Ltd. to perform 3rd verification of the emission reductions reported for the project activity **"Energy Efficient Cook Stove Implementation in India"** VCS Registry Project ID 2336, for the monitoring period **01-April-2022 to 27-June-2023 (inclusive of both dates),** with regard to the relevant requirements for VCS standard 4.5 dated 11-December-2023/8/. This report summarises the findings of the verification of the project, performed on the basis of VCS criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.
The verification process was performed on the basis of all guidance and criteria as provided in VCS Standard version 4.4 & version 4.5/8/, VCS Guide version 4.4/7/, VCS Validation and Verification Manual version 3.2/9/. The selected baseline and monitoring methodology (VMR0006, Version 1)/12/ is applicable to the project and correctly applied.

The project proponents of the "Energy Efficient Cook Stove Implementation in India" project is responsible for:

- The preparation of greenhouses gas emissions data and the reported greenhouse gas emission reductions from the project on the basis set out in the monitoring plan contained in the registered VCS project Joint Project description document & Monitoring Report version 6 of 26-November-2021/3/.
- The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of greenhouse gas emission reductions of the project.

It is the responsibility of VKU to express an independent verification opinion about the project's conformity with the requirements of VCS Standard version 4.4 & 4.5/8/ and GHG program applied, on the reported greenhouse gas emission reductions from the project.

Based on documented evidence and confirmed by an on-site assessment, VKU can confirm that:

- The project has been implemented and operated as per the registered VCS Joint PD&MR/3/.
- The monitoring report and other supporting documents provided are complete and verifiable and in accordance with the applicable VCS Standard version 4.4 & 4.5 requirements/8/;
- The monitoring is in place as per the applied baseline and monitoring methodology/12/;
- The monitoring plan in the registered VCS Joint PD&MR/3/ is as per the applied baseline and monitoring methodology/12/.

VKU's verification approach is based on the understanding of the risks associated with reporting of GHG emission data and the controls in place to mitigate these. VKU Certification planned and performed the verification by doing a strategic analysis, risk assessment followed by obtaining

evidence and other information that VKU Certification considered to develop the sampling and evidence gathering plan and apply that to give **Reasonable level of assurance** that reported GHG emission reductions are fairly stated.

It is VKU's opinion that the GHG emission reduction stated in the monitoring report version 3.2 dated 05-November-2024/1/ for the "Energy Efficient Cook Stove Implementation in India" for the monitoring period from 01-April-2022 to 27-June-2023 (inclusive of both dates) are fairly stated.

The GHG emission reductions are calculated on the basis of approved methodology VMR0006 version 1/12/ and the monitoring plan included in the registered VCS Joint PD&MR, version 06 of 26-November-2021/3/.

To ensure comprehensive evaluation, an Audit plan was prepared, and an Onsite visit was conducted accordingly/30/. Onsite activities were carried out in accordance with the pre-established Evidence Gathering plan. Following the completion of the onsite activities, VKU proceeded with the post-site evaluation, which involved scrutinizing supporting documents, Monitoring Reports (MR), and Emission Reports (ER). The project then underwent Independent Technical review. Adhering to the stipulated requirements, the assessment team formed a positive opinion based on their findings.

The verification opinion is stated in the **Table No: 15 below;**

Opinion	Final Documents	Monitoring period	Emission reduction achieved	Remarks
☒ Positive Opinion ☐ Negative Opinion Adverse Opinion ☐ Unmodified Opinion ☒ Modified Opinion ☐	Monitoring Report Version 3.2 dated 05-November-2024 Emission Reduction Sheet Version 03 dated 23-February-2024	01-April-2022 to 27-June-2023 (Inclusive of both dates)	50,099 tCO_2e	The GHG emission reductions are calculated on the basis of approved methodology VMR0006 version 1/12/ and the monitoring plan included in the registered VCS joint PD&MR/3/. Hence VKU is able to certify that the emission reduction from the project during the monitoring period 01-April-2022 to 27-June-2023 (Inclusive of both start and end dates) amounts to 50,099 tCO_2e which is in line with the applicable VCS requirements set out in section 3.15 of VCS Standard version 4.5/8/ and that the verification of the GHG statement was conducted in in accordance with ISO 14064-3; 2019/36/.
Hence, VKU is able to certify that the emission reduction from the project during the current monitoring period 01-April-2022 to 27-June-2023 (Inclusive of both start and end dates) amounts to 50,099 tCO_2e assessed in line with the applicable VCS requirements set out in section 3.15 of VCS Standard version 4.5/8/ Hence the VVB hereby issue a positive and unmodified opinion in accordance with Clause 9 specifically clause 9.2 of ISO 14064-3; 2019 and Clause 9.7 (specifically clause 9.7.1.6 & 9.7.2) of ISO 14065;2020 which is meeting the requirement stipulated under ISO/IEC 17029:2019 Clause 9.7 with a reasonable level of assurance for the reported GHG emission reduction data which is free from any material misstatement and is sufficiently supported by evidences provided to VVB by PP tabulated in Table no 04 of this report/36/.				

The following table shows the Net Emission Reductions from 01-April-2022 to 27-June-2023 (both dates included) under fixed crediting period from 28-June-2019 to 27-June-2029 (both dates included).

Verification period: From **01-April-2022 to 27-June-2023** (inclusive of both dates):

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)[4]	Net GHG emission reductions or removals (tCO_2e)
Year 2022 (01-April-2022 to 31-December-2022)	32,096	0	1,605	30,491
Year 2023 (01-April-2022 to 27-June-2023)	20,640	0	1,032	19,608
Total	52,736	0	2,637	50,099

The estimated ex-ante GHG emission reductions and removals and the achieved emission reductions and removals for this monitoring period are reported as below-

Year	Ex-ante emissions reductions /removals	Achieved emissions reductions /removals	Percent difference	Justification for the difference
Year 2022 01-April-2022 to 31-December-2022)	44,886[5]	30,491	-0.25%	It is observed that 0.25% of households continued to utilize pre-project devices. Hence, the emission reductions achieved during the current monitoring period are lower than the estimated emission reductions.
Year 2023	28,865[6]	19,608	-0.25%	

[4]The leakage is considered using the factor 0.95 while calculating baseline emission in-line with the registered PD and hence leakage amount is taken as 2,637 tCO_2 in the table.

[5] Estimated ERs for 2022 as per PDD is 59,577 tCO_2

= (59,577/365) * 275 days = 44,886 tCO_2

[6] Estimated ERs for 2023 as per PDD is 59,190 tCO_2

= (59,190/365) * 178 days = 28,865 tCO_2

01-January-2023 to 27-June-2023				
Total	50,224	50,099	-0.25%	

APPENDIX A: ABBREVIATIONS

Abbreviations	Full texts
BE	Baseline Emissions
BEF	Baseline Emission Factor
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM M&P	Modalities and Procedures CDM
CL	Clarification Request
CO2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DNA	Designated National Authority
EB	Executive Board
EF	Emission Factor
ER	Emission Reductions
FAR	Forward Action Request
GHG(s)	Greenhouse gas(es)
GWP	Global Warming Potential
HH	Household
IPCC	Intergovernmental Panel on Climate Change
KCM	Korea carbon Management
MoV	Means of Verification
MR	Monitoring Report
NA	Not Applicable
OSV	On Site Visit
PAI	Project Activity Instances
PDD	Project Design Document
PP(s)	Project Proponent(s)

QA/QC	Quality Assurance /Quality Check
Ref.	Document Reference
SS(s)	Sectoral Scope(s)
TA(s)	Technical Area(s)
UNFCCC	United Nations Framework Convention on Climate Change
VCU	Verified Carbon Unit
VCS	Verified Carbon Standard
VKU	VKU Certification Ltd.
VVS	Validation and Verification Standard
VVB	Validation and verification body

APPENDIX B: SAMPLING SURVEY SHEET QUESTIONNAIRE

Sampling Survey Questionnaire put to use by VKU during Onsite Assessment with End Users/41/ Appendix: 1 Household / Stakeholder's Details for ICS visited by Verification Team as per VVB Sample selected

Sr. No…….	
Household / Stakeholder's name *(Indicate relationship with owner in case is different person)*	
ID of the related sales agreement	
Location *(Village / District / Region / neighbourhood)*	
Device Model / Type	
Date of purchase and installation	
ID of the device (plate)	
Is the device in operation? How many?	
Is the baseline stove in use?	
How many dependants in the household?	
How many meals cooked per day? *(Per day preferentially, other measures allowed)*	
Do you know how to contact CME/PP in case of any problem/complaint/suggestion?	
Is there any test that has been conducted for your device by CME/PP? *(e.g., efficiency tests)*	
How much it saves? *(% of firewood save/Currency/day preferentially, other measures allowed but trying to keep homogeneity)*	
Is there any other previous device in use actually? In which situations?	
Which was the previous used fuel?	
Cooking inside home? Outside?	

Opinion about:	*Perception about the smoke? / Respiratory wellness? / Allergies / Itching?*
The user is happy with the stove. *(Include any comments of the user)*	
Signature of the user: *(If the user doesn't want to sign, respect the decision)*	

APPENDIX C: AUDIT FINDINGS

CL: 03 Clarification Request

CAR: 02 Corrective Action Request

FAR: 00 Forward Action Request

Type	Date	06-December-2023
CL 01	Reference	Section 1,3,4 and 5 of Ver protocol
Description of the Non-Conformance		
a) PP has not submitted the pending documents as per the List of Documents shared. b) PP to clarify why latest version of MR Template has not been employed when it is applicable from 29-08-2023 on the VERRA Website. c) **Section 1.1 of MR:** PP has not justified whether the ICS has already reduced the exposure? d) **Section 1.9 of MR:** PP has not clarified for non-participation under other GHG Programs. e) **Section1.11 of MR:** PP has not clarified whether the SDGs achieved in this project contribute towards "nationally stated sustainable development priorities" of India as per the MR template. f) **Section 1.11 of MR**: Has there been no contribution made by the implementation of the project activity in the current monitoring period? g) **Section 3.1 of MR:** PP has not clarified the timeline of implementation of cookstoves for the project activity. h) **Section 3.1 of MR:** PP has not clarified if they will continue with the distribution of ICS? i) **Section 3.1 of MR:** PP has not clarified the last date of ICS distribution for the project activity and not submitted supporting evidence for the same. j) **Section 4.3 of MR:** No clarity has been provided if any replacement of ICS took place in the current monitoring period. k) **Section 4.3 of MR:** PP has not provided supporting evidence regarding Annual review meeting with local team and other associated entity. l) **Section 4.3 of MR:** How spot check is managed with employed people at ground level? m) **Section 4.3 of MR:** How quality assurance has been carried out at the project site to ensure ICS is in operational condition? n) **Section 4.3 of MR:** PP to clarify why 135 Households were surveyed while required samples were 118? o) **Section 5.1 and 5.2 of MR:** Clarify the corresponding section of the methodology.		
1st Response from PP	**Date**	26-December-2023

a) PP has now submitted the pending documents with VVB as per the List of Documents shared.
b) The MR was prepared on 03-Aug-2023 with the latest MR format available then. Also, as per Update #51 of August 2023 VCS Program Updates, the effective date for the new templates is March 1, 2024. Hence, the MR will continue to be in version 4.2.
c) It was a grammatical error in section 1.1 of MR. The sentence has now been revised.
d) PP has now provided the evidence as reference for the for non-participation under other GHG programs for the section 1.9 of MR.
e) The SDGs do not contribute towards "nationally stated sustainable development priorities" of India. PP has now stated the same in the section 1.11 of the MR.
f) No additional contribution has been generated in this monitoring period. The overall contribution which has been constant since the beginning of the project in section 1.11 of the MR.
g) PP has now updated the timeline of the implementation of the cookstoves for the project activity in the section 3.1 of the MR.
h) The no. given in the MR is the % of the distributed cookstoves with respect to the planned. The same has now been elaborated in section 3.1 of MR. Also, PP will not continue to disseminate ICS.
i) PP has now mentioned the first and last date of ICS distribution in section 3.1 of the MR for the project activity and has shared supporting evidence for the same with VVB.
j) During spot check no ICS was found damaged or needed replacement. Also, no grievance has been received from the beneficiaries in the current monitoring period for ICS replacement. Thus, there has been no replacement of ICS in the current monitoring period.
k) PP has now shared the supporting evidence with VVB for the annual review meeting with local team and other associated entity.
l) The local agents visit random beneficiaries in their respective regions to spot check the operational condition of the ICS.
m) Apart from random spot checking of ICS by local agents, third party monitoring surveys are conducted to check operational condition of ICS.
n) The sample size for the entire population was calculated to be 116. However, to select samples from each district, proportionate samples were selected from each district as mentioned in the "Sample size per district" calculation. To have a more accurate result, the samples for each district were rounded up and the sum of the rounded of values resulted in 118. However, for a more reliable result, the third-party monitoring agency finalized 135 samples for the survey. PP has elaborated the same in the section 4.3 of the MR.
o) PP has provided the reference of the applied methodology in the section 5.1 and section 5.2 of the MR.

1st Assessment by Audit Team	Status	Open	Date	24-January-2024

a) Assessment team confirms that PP has not submitted some pending documents with VVB as per the List of Documents shared. Hence, accepted #Open
b) Assessment team confirms that PP has clarified about use of MR template version 4.2 that The MR was prepared on 03-Aug-2023 with the latest MR format available then. Also, as per Update #51 of August 2023 VCS Program Updates, the effective date for the new templates is March 1, 2024. Hence, the MR will continue to be in version 4.2 which is justified. Hence, accepted. #Closed.
c) **Section 1.1 of MR:** Assessment team confirms that PP has corrected the sentence. Hence, accepted #Closed.
d) **Section 1.9 of MR:** Assessment team confirms that PP has not provided evidence for non-participation under other GHG Programs evidence. #Open.
e) **Section 1.11 of MR**: Assessment team confirms that PP has clarified that SDGs do not contribute towards "nationally stated sustainable development priorities" of India. PP has now stated the same in the section 1.11 of the MR. Hence, accepted #Closed.

f) **Section 1.11 of MR** Assessment team confirms that PP has clarified that no additional contribution has been generated in this monitoring period. The overall contribution which has been constant since the beginning of the project in section 1.11 of the MR. Hence, accepted #Closed.

g) **Section 3.1 of MR:** Assessment team confirms that PP has clarified the timeline of implementation of cookstoves for the project activity. Hence, accepted #Closed.

h) **Section 3.1 of MR:** Assessment team confirms that PP has clarified that they will not continue with distribution of ICS but the same information needs to be mentioned in the MR. #Open

i) **Section 3.1 of MR:** Assessment team confirmed that PP has now mentioned the first and last date of ICS distribution in section 3.1 of the MR for the project activity and has shared supporting evidence for the same with VVB. Hence, accepted #Closed.

j) **Section 4.3 of MR:** Assessment team confirmed that PP has clarified that during spot check no ICS was found to be damaged or needed replacement. Also, no grievance has been received from the beneficiaries in the current monitoring period for ICS replacement. Thus, there has been no replacement of ICS in the current monitoring period. but also same information should be mentioned in MR. #Open

k) **Section 4.3 of MR:** Assessment team confirmed that PP has not shared the supporting evidence with VVB for the annual review meeting with local team and other associated entity. #Open.

l) **Section 4.3 of MR:** Assessment team confirmed that PP has clarified that the local agents visit random beneficiaries in their respective regions to spot check the operational condition of the ICS but same information needs to mentioned in the MR. #Open

m) **Section 4.3 of MR:** Assessment team confirmed that PP has clarified that apart from random spot checking of ICS by local agents, third party monitoring surveys are conducted to check operational condition of ICS. But same information needs to be mentioned in MR. #Open

n) **Section 4.3 of MR:** Assessment team confirmed that PP has clarified about surveying 135 Households over required samples 118.Hence, accepted #Closed.

o) **Section 5.1 and 5.2 of MR:** Assessment team confirms that PP has provided the reference of the applied methodology in the section 5.1 and section 5.2 of the MR. Hence, accepted #Closed.

p) **Section 1.10 of MR:** PP has not provided any evidence to support that there is no impact on scope 3 emissions. #Open

q) **Section 4.3 of MR:** PP has provided spot check evidence but assessment team requires more evidence of spot check. #Open

2nd Response from PP	**Date**	08-February-2024

a) PP has now submitted all the required documents with VVB as per the List of Documents.

d) PP has now provided the evidence for non-participation under other GHG programs for the section 1.9 of the MR.

h) PP will not continue with distribution of ICS in this project activity. PP has now clearly mentioned the same in section 3.1 of the MR.

j) PP has now mentioned in the section 4.3 of the MR that no ICS was found damaged or needed replacement. Also, no grievance has been received from the beneficiaries in the current monitoring period for ICS replacement.

k) PP has now submitted supporting evidence to the VVB regarding Annual review meeting with local team and other associated entity as per mentioned in the section 4.3 of the MR.

l) PP has now clearly mentioned that ICS spot check has been conducted by the employed people at ground level of ICS in current monitoring period in the section 4.3 of the MR.

m) PP has now mentioned in the section 4.3 of the MR that the monitoring activities have been conducted in two phases, one is spot check by Greentech Environment's staff and another

by a third-party agency in current monitoring period. Evidence for the spot check and monitoring survey by third party have already been shared with the VVB for the same. **p)** There are no supply chain (scope 3) emissions involved in this project activity during the current monitoring period and over the project life-time. The project activity is involved in the ICS distribution only. The ICS has been manufactured locally by procuring local raw materials. Hence, no scope 3 emissions occurred due to this project activity. **q)** PP has now provided more evidences of spot check to the VVB.

2nd Assessment by Audit Team	**Status**	Closed	**Date**	09-February-2024

a) Assessment team confirms that PP has submitted supporting documents as per the list of documents. Hence, accepted #Closed.
d) Assessment team confirms that PP has provide the evidence for non-participation under other GHG programs. Hence, accepted #Closed.
h) Assessment team confirms PP has clarified that they will not continue with distribution of ICS in the project activity. Hence, accepted #Closed.
j) Assessment team confirms PP has clarified that no ICS was found damaged or needed replacement. Also, no grievance has been received from the beneficiaries in the current monitoring period for ICS replacement. Hence, accepted #Closed.
k) Assessment team confirms that PP has submitted supporting evidence to the VVB regarding Annual review meeting with local team and other associated entity. Hence, accepted #Closed.
l) Assessment team confirms that PP has now clearly mentioned that ICS spot check has been conducted by the employed people at ground level of ICS in current monitoring period in respective section of MR. Hence, accepted #Closed.
m) Assessment team confirms that PP has clarified and mentioned in the section 4.3 of the MR that the monitoring activities have been conducted in two phases, one is spot check by Greentech Environment's staff and another by a third-party agency in current monitoring period. Evidence for the spot check and monitoring survey by third party have already been shared with the VVB for the same. Hence, accepted. #Closed.
o) Assessment team confirms PP has clarified that there are no supply chain (scope 3) emissions involved in this project activity during the current monitoring period and over the project life-time. The project activity is involved in the ICS distribution only. The ICS has been manufactured locally by procuring local raw materials. Hence, no scope 3 emissions occurred due to this project activity. Hence, accepted #Closed.
p) Assessment team confirm that PP has now submitted more evidence of spot check. Hence, accepted #Closed.

CL#01 Closed

Type	**Date**	06-December-2023
CL 02	**Reference**	Section of Ver protocol: 4 and ER Sheet

Description of the Non-Conformance

a) **Section 4.2 of MR:** How the value for Adjustment to account for any continued use of pre-project devices during the year y is achieved?

b) **ER Sheet:** PP to demonstrate the actual implementation of ICS in the project activity. c) **ER Sheet:** PP has not computed the value obtained in sub-sheet "ER Sheet". d) **ER Sheet:** The emission reduction figures for each year necessitate a downward rounding adjustment.

1st Response from PP	**Date**	26-December-2023
a) In the section 4.2 of the MR, the value for Adjustment to account for any continued use of pre-project devices during the year y was determined through a monitoring survey conducted by a third party. The μ_y is the mean value of the proportion of baseline cookstove usage found in the survey for each beneficiary. The survey sheet has been shared with the VVB. b) PP has now demonstrated the actual implementation of ICS in the project activity in the ER sheet. c) PP has now computed the value obtained in sub-sheet "ER Sheet". d) PP has now calculated the Emission Reduction figures for each year with a downward rounding adjustment in the ER sheet.		

1st Assessment by Audit Team	**Status**	Closed	**Date**	24-January-2024
a) **Section 4.2 of MR:** Assessment team found that in the section 4.2 of the MR, the value for Adjustment to account for any continued use of pre-project devices during the year y was determined through a monitoring survey conducted by a third party. The μ_y is the mean value of the proportion of baseline cookstove usage found in the survey for each beneficiary. The survey sheet has been shared with the VVB. #Closed b) **ER Sheet:** Assessment team confirms that PP has now demonstrated the actual implementation of ICS in the project activity in the ER sheet. Hence, accepted # Closed. **c) ER Sheet:** Assessment team confirms that PP has now computed the value obtained in sub-sheet "ER Sheet". Hence, Accepted #Closed. **d) ER Sheet:** Assessment team confirms that PP has now calculated the Emission Reduction figures for each year with a downward rounding adjustment in the ER sheet. Hence, accepted. #Closed. **CL#02-Closed**				

Type	**Date**	21-February-2024
CL 03	**Reference**	Section of Ver protocol: Section 2.2.3.1,3.2.2 & ER sheet

Description of the Non-Conformance
1. Section 2.2 – a) There are three separate districts. Where grievance registers are kept and who is custodian of each site? b) Since it is a cook stove project it is not clear how a grievance register is used to maintain on going communications with stake holder in each district of project activity in Assam.

c) Clarify that how Project Meets the requirement of clause 3.18.5 & 3.18.6 of VCS 4.5.

2. **Section 3.1** - Life of Stoves distributed in 2019 will get over in 2024. Will any replacement be made for the end-of-life ICS. Please clarify.
3. **Section 3.2.2 -** Is the mistake pertaining to any one district or editorial mistakes were for all 3 districts?
4. **ER Sheet –** Please explain clearly the source of value from this link 275.168. Also reference to these is not transparently referred to (HW_{region} and N_{region}) & TI_{region}

1st Response from PP	**Date**	23- February-2024

1. **Section 2.2-**
   a) PP has now clearly justified how the grievances are maintained for all the 3 districts.
   b) It is now clearly mentioned how a grievance register is used to maintain on going communications with stake holder in each district of project activity in Assam.
   c) It now clear that the Project Meets the requirement of clause 3.18.5 & 3.18.6 of VCS Standard v4.5.
2. Yes, the ICS will be re-distributed after the end of the ICS life.
3. The co-ordinates were representing only one location. PP has now provided the coordinates for all the tehsils from all the 3 districts that come under the project boundary.
4. It was calculated during the project registration. The value for the f_{NRB} is fixed for the project crediting period and same has now been corrected in ER sheet.

1st Assessment by Audit Team	**Status**	Closed	**Date**	28-February-2024

1. **Section 2.2**
   a) Assessment team confirms that PP clarified how the grievances are maintained for all the 3-districts and also mentioned in section 2.2 of the MR. #CLOSED
   b) Assessment team clarified that how grievance registers are maintained for ongoing communication with stakeholder for each district of assam. #CLOSED
   c) Assessment team found that, PP has met the requirements of clause 3.18.5 & 3.18.6 of VCS Standard v4.5.
2. **Section 3.1** – PP has clarified that re-distribution of ICS in this project activity will be carried out after life span will be over. #CLOSED
3. **Section 3.2.2** – PP has clarified that geo-coordinates for all the tehsils of the project boundary have been added for more clarity. #CLOSED
4. **ER Sheet-** Assessment team found that PP has clarified the value of f_{NRB} which is fixed for the project crediting period at the time of project registration. #CLOSED

CL#03 CLOSED

Type	**Date**	13-August-2024
CL 04	**Reference**	PRR Sheet
Description of the Non-Conformance		

1. The proportion of operational cookstoves within the monitoring period is claimed to be 100 % This is highly unrealistic, given the minimal probability of 100% stove operation without breakages and abandonment near their lifetime (5 years). The project documentation does not transparently provide the measures put in place for on-time stove maintenance, support for repairs and replacement. 2. PP has not provided any information on local/third-party implementation partners in MR. Also, the local representative of the project, Greentech Environment, is in Gujarat, while the project is in Assam. It is unclear how Green Environment manages the roles and responsibilities mentioned in section 4.3 of the MR. 3. The project ICS falls under Tier 1 to 2 but is claiming an efficiency of higher than 30% without an external source of air. PP to provide supporting data cross-verifying the efficiency and manufacturer's credentials. How the project cookstoves fit within the multi-tire cookstove framework considering their efficiencies is required to be elaborated upon.				
1st Response from PP			**Date**	07/11/2024
1. The project proponent has local ground teams that stays regularly in touch with the beneficiaries. Any grievances raised by the beneficiaries are resolved promptly starting from any repair work to replacements. Furthermore, the ground team performs random spot checks of the ICS on a regular basis and the record of the same has been submitted to the VVB. These exercises ensure all the distributed ICS are operational. Any non-operational instances have already been accounted under µy parameter. Additionally, after reviewing ICS projects (VCS 2473, VCS 2664, and VCS 3109) with comparable monitoring periods and lifespan, PP found it feasible to achieve a 100% proportion of operational cookstoves, a benchmark that has been previously approved. 2. Greentech Environment as a company is registered in Gujarat, however, they operate across India. They have on ground team at the project locations, and they are the local implementor as mentioned in the Section 5.3 of the registered PD. As per the roles and responsibilities described in the PD, Greentech has deployed their local team and resources for ICS distribution, data collection and regular spot-check at households. 3. The ICS was tested for efficiency from a third-party lab in accordance with WBT standards and the efficiency was reported to be 33.25%, hence, the project ICS falls under Tier 2 to 3[7][8][9]. Further for the calculation of ERs over the years, the efficiency of the cookstove was calculated using equation 4 of the registered PD and applied methodology VMR0006 v1.0. Hence, for the current monitoring period, the efficiency was 30.33% for 2022 and 30.02% for 2023 which is in accordance with the applied methodology VMR0006 v1.0.				
1st Assessment by Audit Team	**Status**	Closed	**Date**	05/12/2024

[7] https://www.researchgate.net/figure/Tiers-for-selection-and-ranking-of-stoves-adapted-from-ISO-IWA_tbl1_282925130

[8] https://www.researchgate.net/figure/Tier-based-performance-standards-for-cookstoves_tbl3_329232209

[9] https://energypedia.info/wiki/Cooking_Energy_Matrix

1. PP has updated MR and added required justification as per the actual onsite scenario. For cross-verification of operational ICS, PP has referred secondary data from other registered VCS Projects around the same timeline of monitoring period and lifespan. Assessment team found that PP's ground team efforts including Spot-check at regular intervals, grievance mechanism ensures proper operationality of ICS. Hence, this finding is closed.
2. Assessment team confirms Greentech Environment as a company is registered in Gujarat. However, they have on ground team at the project locations, and they are the local implementor as mentioned in the Section 5.3 of the registered PD. It was further confirmed during interviews that Greentech has deployed their local team and resources for ICS distribution, data collection and regular spot-check at households. Hence, this finding is closed.
3. WBT conducted for the ICS shows 33.25% as its thermal efficiency. As per publicly available resources, it can be confirmed it falls under Tier 2 to 3 on the basis of its efficiency. The efficiency is decreasing yearly as per the applied methodology. The ER Calculation of cookstoves is based on the Registered PD and applied methodology. Hence, this finding is closed.

CL#04 Closed

Type	Date	06-December-2023
CAR 01	Reference	Section 01, 02 of Ver protocol
Description of the Non-Conformance		

a) **Section 1.1 of MR:** In the monitoring report, futuristic sentences have been used. Since the verification is for the current monitoring period, PP has not reported the actual monitoring practice followed during the current monitoring period.

b) **Section 1.1 of MR:** PP has not mentioned the name of VVB conducting current verification.

c) **Section 1.7 of MR:** The project coordinates are not in line with the location mentioned in MR.

d) **Section 1.11 of MR:** PP has not mentioned sub section of SDG indicator 3.2, 7.0,13.1 and not updated correctly the name of SDG indicator as mentioned in "Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development ".

e) **Section 2.2 of MR:** PP has not mentioned the following in the MR:

- The procedures or methods used for engaging local stakeholders (e.g., dates of announcements or meetings, periods during which input was sought).
- The procedures or methods used for documenting the outcomes of the local stakeholder communication.

f) **Section 3.1 of MR:** PP has not mentioned the current scenario of the project and not mentioned information about the technology and implementation of project as per requirement of MR template version 4.2.

1st Response from PP	Date	26-December-2023

a) It was a grammatical error in section 1.1 of the MR. PP has now revised the sentences.
b) PP has now mentioned the name of the VVB for the current verification period in section 1.1 of MR.
c) There was an editorial mistake in section 1.7 of the MR. PP has now corrected the coordinates and requested for project description deviation regarding the same.
d) PP has now revised and correctly mentioned the sub section of SDG indicator 3, 7, and 13 in table of the section 1.11 of the MR. Also, updated correctly the name of SDG indicator as mentioned in "Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development "
e) **Section 2.2 of MR:**
   - PP has now updated the procedure or method used for engaging local stakeholders, announcement & meeting dates and outcomes of the local stakeholder communication in the section 2.2 of the MR.
   - PP has now updated the procedure, dates of announcement & meeting and outcomes of the local stakeholder communication in the section 2.2 of the MR.
f) PP has now mentioned the current project scenario for the current monitoring period in the section 3.1 of the MR. Also, PP has provided the information as per the guidelines of the MR template version 4.2.

1st Assessment by Audit Team	Status	Open	Date	24-January-2024

a) **Section 1.1 of MR:** Assessment team confirms that PP has updated the sentence. Hence, accepted. #Closed.
b) **Section 1.1 of MR:** Assessment team confirms that PP has not mentioned the full name of VVB for the current verification period. #Open.
c) **Section 1.7 of MR:** Assessment team confirms that some minor corrections are required in Geo-coordinates. #Open.
d) **Section 1.11 of MR:** Assessment team confirms that PP has now revised sub-SDG Target no. but not updated the SDG indicator name of 1.2.1, 2.3.1, 3.9.1, 7.1.2, and 8.6.1 in table of the section 1.11 of the MR as per mentioned in "Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development ". #Open.
e) **Section 2.2 of MR:** Assessment team confirms that PP has mentioned the following in the MR:
   - The procedures or methods used for engaging local stakeholders (e.g., dates of announcements or meetings, periods during which input was sought).
   - The procedures or methods used for documenting the outcomes of the local stakeholder communication. Hence, accepted #Closed.

f) **Section 3.1 of MR:** Assessment team confirms that PP has mentioned the current project scenario for the current monitoring period in the section 3.1 of the MR. Also, PP has provided the information as per the guidelines of the MR template version 4.2. Hence, accepted # Closed.
g) **Section 5.3 of MR:** PP has not mentioned followed methodology section in this part of the FVR. #Open.

h) **Sample Survey Sheet:** Assessment Team find that the date of distribution is mismatched with database sheet. #Open			
2nd Response from PP		**Date**	08-February-2024
a) There was an editorial mistake. PP has now mentioned the full name of the current VVB conducting verification in the section 1.1 of the MR. **b)** There was an editorial mistake. PP has now corrected the Geo-coordinates in the section 1.7 of the MR. **c)** PP has now updated correctly SDG indicator name of 1.2.1, 2.3.1, 3.9.1, 7.1.2, and 8.6.1 in table of the section 1.11 of the MR as mentioned in "Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development ". **g)** PP has now mentioned the reference for the leakage in the section 5.3 of the MR as per the applied methodology. **h)** There was an editorial error in the date of distribution mentioned in the sample survey sheet. PP has now revised the date and is now in line with the data base sheet.			
2nd Assessment by Audit Team	**Status**	Closed	**Date**	09-February-2024
a) **Section 1.1 of MR:** Assessment team confirms that PP has clarified it was an editorial mistake and now mentioned the full name of VVB for the current verification period. Hence accepted. #Closed. **b)** **Section 1.7 of MR:** Assessment team confirms that PP has now done required corrections of Geo-coordinates in respective sections. Hence, accepted #Closed. c) **Section 1.11 of MR:** Assessment team confirms that PP has now revised sub-SDG Target no. also updated the SDG indicator name of 1.2.1, 2.3.1, 3.9.1, 7.1.2, and 8.6.1 in table of the section 1.11 of the MR as per mentioned in "Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development ". Hence, accepted. #Closed. **i)** **Section 5.3 of MR:** Assessment team confirms that PP has now mentioned the reference for the leakage in the section 5.3 of the MR as per the applied methodology. Hence, accepted #Closed. **d)** **Sample Survey Sheet:** Assessment team confirms that PP has revised the date and is now in line with the database sheet. Hence accepted #Closed. **CAR#01 Closed**				

Type	**Date**	21-February-2024
CAR 02	**Reference**	Section of Ver protocol: 1.1,3.1,4.2,4.3,5.4 & ER sheet
Description of the Non-Conformance		
1. **Section 1.1** – Number of year calculation is incorrect in audit history table.		

2. **Section 3.1** - How installation of ICS has been completed because registered PDD is planned to install 25,520 ICS under the project activity. Please provide reasons for not completing the planned number of IC.
3. **Section 4.2** - Details of survey mentioning dates and surveys validity for Parameter $N_{y,i,j}$ and μ_y is not mentioned
4. **Section 4.3** - Provide details of monitoring activity with dates.
5. **Section 5.4** - Inappropriate statements as distribution is lesser than planned.
6. **ER sheet** –

    a) When life span of ICS is 5 years why efficiencies are projected beyond year 5.
    b) The calculated percent difference between estimated ERs and Actual ERs is not shown with -ve sign.
    c) Why the futuristic projections are shown in ER sheet and How this number is going to remain constant?

1st Response from PP	**Date**	23-February-2024

1. No. of years calculation has now been corrected and calculated in "YEAR, MONTH and DAYS".
2. As mentioned in the following paragraph, the PP has distributed only 68.1% (17,379) out of the total planned 25,520 cookstoves and PP has also declared that no further distribution will occur under this project activity. Hence, the ICS distribution is considered to be completed.
3. Details of the monitoring survey conducted during current monitoring period has already been provided in section 4.3 of the MR.
4. The details have already been mentioned in the following paragraphs of this section and also, the monitoring dates have been mentioned in the same section.
5. There was an editorial error. PP has now corrected the statement in section 5.4 of the MR.
6. ER sheet-
    a) PP has determined the efficiency for the 10 years as the project crediting period is 10 years. PP will re-distribute the ICS of the same manufacturer with the same efficiency after 5 years (once the life-span is over).
    The new efficiency will be higher in line with the same as for the 1st year. But in project case, the conservative value will be taken i.e., efficiency mentioned here for the 6th year and so on.
    b) The calculated percent difference between estimated ERs and Actual ERs is now shown -ve sign.
    c) There was an editorial error. PP has now corrected the same in ER sheet.

1st Assessment by Audit Team	**Status**	Closed	**Date**	28-February-2024

1. **Section 1.1-** Now, PP has corrected and calculated value in audit history table. #CLOSED
2. **Section 3.1** – PP has explained reasons for not completing the planned number of ICS.
3. **Section 4.2 –** Assessment team found that PP has incorporated the information regarding monitoring survey date and validity. #CLOSED
4. **Section 4.3** – PP has provided details of monitoring activity with dates.
5. **Section 5.4 –** Now, PP has corrected the statements of distribution.
6. **ER Sheet-**
    a) Assessment team found that PP has provided the justification for "efficiency for the 10 years whenever project has applied 5 years efficiency. #CLOSED

b) PP has added -ve sign in difference table. #CLOSED
c) Assessment team found that PP has removed futuristic projections from ER Sheet. #CLOSED

CAR#02 CLOSED

Type	**Date**	13-August-2024
CAR 03	**Reference**	PRR Sheet

Description of the Non-Conformance

1. There is no information provided in the monitoring report about the manufacturer of the improved cookstove. The name of cookstoves GTW-M mentioned in section 3.1 of the MR is not mentioned in the registered PD.
2. The project documentation does not include information on survey results under section 4.3 of the MR. The sampling calculation in the MR indicates that PP has considered the expected proportion of cookstoves in operation for specific districts (Baska—0.78, Udalguri—0.59 & Barpeta—0.71) but did not specify their sources.
3. PP has compared the estimated emission reduction of 25,520 cookstoves with the actual emission reduction of 17,229 cookstoves, which is not the correct approach.

1st Response from PP	**Date**	07-November-2024

1. The PP has procured various parts of the ICS from different locations in India. The ICS were then assembled at the project location by the local ground teams and were distributed to the beneficiaries. The name GTW-M stands for “Green Tech Wood-based – Medium”, which is a model name given to the ICS internally, to make it distinguishable. Hence, no information regarding the manufacturer is provided as there is no manufacturer per se. However, the registered PD is missing this information due to a typo.
2. The proportion of the cookstoves for specific districts have been derived from the registered PD and the same has been informed in the section 4.3 of the MR. Further the results of the survey has now been elaborated in the section 4.3 of the MR.
3. The PP has now revised the change in emission reduction table in section 5.4 of the MR.

1st Assessment by Audit Team	**Status**	Closed	**Date**	05-December-2024

1.Assessment team had confirmed regarding the ICS parts procurement and distribution during onsite visit. It has been confirmed that ICS are not sourced from any manufacturer but assembled at the project location. The name has been added in the MR although it was missed at the time of PD registration. PP has justified the reason for name being missed out in the PD .Hence, this finding is closed.

2. The proportion of cookstoves for specific districts has been chosen as per the registered PD. PP has elaborated on the survey results in Section 4.3 of MR. Hence, this finding is closed.

3.MR has been revised to compare estimated emission reduction with actual emission reduction. Hence, this finding is closed. CAR#03 Closed.

~~Type~~			~~Date~~	~~DD/MM/YYYY~~
~~FAR~~			~~Reference~~	
~~Description of the Non-Conformance~~				
~~1st Response from PP~~			~~Date~~	~~DD/MM/YYYY~~
~~1st Assessment by Audit Team~~	~~Status~~	~~Open/Closed~~	~~Date~~	~~DD/MM/YYYY~~

APPENDIX D: COMPETENCE STATEMENTS

Team Leader and Sectoral Expert 3.1

Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Deepali Sharma
Nationality	Indian
Countries of Experience	India, Zimbabwe, Madagascar, Mozambique
Education Qualification	M.Sc in Environmental Sciences
Year of Experience	03 Years +
Area of Expertise	Climate Change &Environment / Industry
Eligible Sectoral Scope	TA 1.2 - Energy generation from renewable energy sources TA 3.1. Energy demand

Roles

Project Trainee	NO
Validator/Verifier Trainee	NO
Validator	YES
Verifier	YES
Team Leader	YES
Technical Reviewer	NO
Local Expert (Country Wise)	YES
TA Expert (1.2 & 3.1)	YES
Financial Expert	NO

Reviewed by	Apoorva Gupta (Quality Manager)	Date	19/10/2023
Approved by	Barun Kumar (Technical Manager)	Date	19/10/2023

Validator/Verifier Trainee

Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Km Nisha Chauhan
Nationality	Indian
Countries of Experience	India
Education Qualification	B.Sc. (PCM) M.Sc. (Environmental Science)
Year of Experience	1 year in VKU
Area of Expertise	Climate Change & Environment
Eligible Sectoral Scope	NA

Roles

Project Trainee	NO
Validator/Verifier Trainee	YES
Validator	NO
Verifier	NO
Team Leader	NO
Technical Reviewer	NO
Local Expert (Country Wise)	NO
TA Expert (X.X)	NO
Financial Expert	NO

Reviewed by	Vandana Gupta (Quality Manager)	Date	08.09.2023
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	08.09.2023

Project Trainee

Certification Pvt. Ltd.
VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Chanchlika Kadwe
Nationality	Indian
Countries of Experience	India
Education Qualification	M.Sc. in Geology B.Sc. in Geology, Zoology, Chemistry
Year of Experience	Fresher
Area of Expertise	NA
Eligible Sectoral Scope	NA

Roles

Project Trainee	YES
Validator/Verifier Trainee	NO
Validator	NO
Verifier	NO
Team Leader	NO
Technical Reviewer	NO
Local Expert (Country Wise)	NO
TA Expert (X.X)	NO
Financial Expert	NO

Reviewed by	Vandana Gupta (Quality Manager)	Date	04/09/2023
Approved by	Vivek Kumar Ahirwar (Technical Manager)	Date	04/09/2023

Technical Reviewer and Sectoral Expert 3.1

Certification Pvt. Ltd.

VKU.F50W. Competence Statement

COMPETENCE STATEMENT

Name	Barun Kumar
Nationality	Indian
Countries of Experience	India, South Africa, Kenya, Uganda, DR Congo, Zambia, Madagascar, Fiji
Education Qualification	B.Sc. (Environmental Science and Water Management) M.Sc. (Ecology & Environmental Sciences)
Year of Experience	12 Years +
Area of Expertise	Climate Change & Environment
Eligible Sectoral Scope	TA 1.2 - Renewables TA 3.1 – Energy Demand TA 6.1 – Construction TA 7.2 – Transport TA 13.1 – Solid waste and wastewater TA 14.1 – Forestry

Roles

Project Trainee	NO
Validator/Verifier Trainee	NO
Validator	YES
Verifier	YES
Team Leader	YES
Technical Reviewer	YES
Local Expert (Country Wise)	YES
TA Expert (1.2, 3.1, 6.1, 7.1, 13.1, 14.1)	YES
Financial Expert	NO

Reviewed by	Apoorva Gupta (Quality Manager)	Date	08/10/2023
Approved by	Dr. Vikas Kumar Aharwal (Founder & Director)	Date	08/10/2023