



DISTRIBUTION OF ONIL STOVES – MEXICO, SAN FELIPE USILA 1



Document Prepared By

(By KBS Certification Services Ltd.)

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Prepared By	KBS Certification Services Ltd.
Contact	Registered Office: KBS Certification Services Ltd. 414-424, Om Shubham Tower, Neelam Bata Road, N.I.T. Faridabad, Haryana-121001, India Tel: +91 129 4034513, 4054513, Email: info@kbsindia.in Website: www.kbscertification.com
Approved By	Praveen N Urs Director of Climate Change & Sustainability
Work Carried Out By	Team Leader, Technical Expert: Mr. Sanjay Kandari Local Expert: David González Technical Reviewer (TA 3.1): Mr. S Ranganathan Technical Reviewer (TA 3.1): Mr. Ashish Yadav Manager T & C Reviewer: Ms. Margaret Francis

Summary:

‘C-Quest Capital Stove Asia Ltd’ authorized by ‘C-Quest Capital LLC’ has appointed the verification body KBS Certification Services Ltd. to perform a verification of VCS Project Activity “Distribution of ONIL Stoves – Mexico, San Felipe Usila 1” in Mexico (hereafter “project activity”) for the period from 01-November-2021 to 31-January-2023 (both days included).

The project proponent ‘C-Quest Capital LLC’ applied the CDM approved Methodology: AMS II.G., version 12 “Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass. In addition, the Standard: Sampling and Surveys in CDM Project Activities and Programme of Activities version 9.0; Guidelines: Sampling and Surveys in CDM Project Activities and Programme of Activities version 4.0 are used; these documents include the requirements for sampling and surveys applied to clean development mechanism projects and programme of activities (PoA) and specifies the reliability requirements and describes appropriate sampling methods and what is expected to be provided in a sampling plan.

The verification consisted of the following three phases: i) a desk review of the Monitoring Report ii) On- site Visit; iii) the resolution of outstanding issues and internal technical review followed by the issuance of the final verification report and opinion. During the verification process 03 CARs, 08 CLs and 00 FAR were raised, all the CARs and CLs are closed now and no FAR was raised during this

verification. The list of Clarification and Corrective Actions Requests (CL and CAR) is presented in this report.

KBS Certification Services Ltd. confirms that the project is implemented in accordance with the validated VCS-PD and the monitoring plan; and then, claimed emissions reductions are calculated without material misstatements.

KBS Certification Services Ltd. has performed the verification of 'Distribution of ONIL Stoves – Mexico, San Felipe Usila 1' based on all issues and criteria of VCS Standard version 4.4 and VCS Program Guide version 4.3 for VCS projects and on the criteria given to provide for consistent project operations, monitoring and reporting. Hence, KBS Certification Services Pvt. Ltd in opinion that the project correctly applies the baseline and monitoring methodology AMS II.G., version 12 "Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass" and meets the relevant VCS requirements for the Methodology, Voluntary Carbon Standard requirements and the relevant host country criteria.

Therefore, KBS Certification Services Pvt. Ltd can certify that the emissions reductions from the "Distribution of ONIL Stoves – Mexico, San Felipe Usila 1" project during the period 01-November-2021 to 31-January-2023 amount to 7,614 tonnes of CO₂e.

The verification is based on the VCS PD, monitoring report (MR), Emission reduction calculation spread sheet (ER sheet); additional documents related to baseline and monitoring methodology; the subsequent background investigation, follow-up interviews and supporting documents made available to the verification team by project proponent.

A risk-based approach has been followed to perform the verification of the project activity. In the course of verification 03 CARs, 08 CLs and 00 FAR were raised. All the CARs and CLs have been closed out successfully.

Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, KBS planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

As a result of the verification, the verification team confirms that:

- The project fulfils criteria of VCS Standard Version 4.4.
- The project is in line with all relevant VCS requirements.
- Relevant decisions, clarifications, and guidance from the CMP and the CDM Executive Board and VERRA;
- All information and references relevant to the project activity resulting in emission reductions;
- The monitoring is transparent, adequate and in line with applied baseline and monitoring methodology of AMS II.G., version 12.
- The verification report has been revised to address the findings of VERRA during the project review.

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1 INTRODUCTION

1.1 Objective

KBS Certification Services Ltd. has been contracted by, ‘C-Quest Capital Malaysia Limited’ to undertake verification and certification for the greenhouse gas (GHG) emission reductions reported from ‘Distribution of ONIL Stoves – Mexico, San Felipe Usila 1’ (VCS ID 1216) for the monitoring period 01-November-2021 to 31-January-2023. (Inclusive of both days), under the crediting period 20-December-2020 to 19-December-2030, in the initial monitoring report version 01 dated 27 Jan 2023/1/, with respect to the relevant requirements of VCS Standard Version 4.4/14/. The VCS projects must undergo an independent third-party verification and certification of emission reductions as the basis for issuance of Voluntary Emission Reductions (VERs).

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

- The project activity has been implemented and operated as per the project description (PD) and that all physical features (technology, project equipment, and monitoring equipment) of the project are in place;
- Monitoring report and other supporting documents are complete;
- The data is recorded and stored as per the monitoring methodology and approved monitoring plan.
- To confirm that the monitoring system is implemented and fully functional to generate Voluntary Emission Reductions (VERs/VCUs) without any double counting, and
- 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.

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of monitoring report, VCS project description (VCS PD), including the monitored data, and other relevant documents made available to verifier and information collected through performing interviews during Onsite assessment of the project activity.

The project is assessed against the requirements of VCS standard version 4.4 and related rules and guidance/14/. KBS has, based on the recommendations in the latest version of Verified Carbon standard, and employed a rule-based approach (as criteria) in the verification, focusing on the identification of significant reporting rules and the reliability of project monitoring.

The aspects to be covered under the purview of verification are:

- Ensure that the project activity has been implemented and operated as per the VCS PD and that all physical features (technology, project equipment, and monitoring equipment) of the project are in place as per the documents provided by the client and during onsite audit;
- Ensure that the monitoring report and other supporting documents provided are complete
- Ensure that the practiced monitoring system and procedures comply with the monitoring systems and procedures described in the monitoring plan.
- Evaluate the data recorded and stored are as per the monitoring methodology.

1.3 Level of Assurance

☒ Reasonable level of assurance

The verification is based on the VCS PD, MR, additional documents related to baseline and monitoring methodology, the subsequent background investigation, monitoring plan, follow-up interviews and supporting documents made available to the verification team by project proponent. The information in these documents is reviewed against the requirements of VCS Standard Version 4.4/14/. KBS has employed a risk-based approach in the verification, focusing on the identification of significant risks for project implementation and the generation of Emission Reductions.

The items covered in the verification are described below:

- Criteria of VCS Version 4.4 (VCS Program guide Version 4.3 & VCS Standard Version 4.4)
- Criteria of approved methodology, AMS II.G., version 12 “Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass”
- VCS Monitoring Report
- Monitoring Plan
- Background investigation and follow up interviews
- Stakeholder feedback
- Project’s compliance with other relevant rules, including the project country (Mexico) legislation and assurance to stakeholders of the quality

Furthermore, the verification team used additional documentation by third parties like host party legislation, technical reports referring to the project design or to the basic conditions and technical data available on public domain. A desk review is carried out to assess the following:

- Compliance with relevant law and regulations

- Stakeholder comments (If any)
- Technical specifications of improved cookstoves.
- Beneficiary agreements
- Commissioning Certificate
- Onsite Audit (16 Feb 2023 & 17 Feb 2023) for verification

The Verification team has checked all the above-mentioned details and confirms that all the information provided is accurate.

Through the onsite interviews host country rule and regulations related to project activity, Project description, technological measures, Implementation, Operation, Management of project activity and Training of personnel, Baseline and Monitoring plan, Stakeholder consultation etc. has been checked and found appropriate.

KBS applies the risk-based approach aimed at focusing on high-risk issues to the verification results whilst not omitting any part of the mandatory processes. A few discrepancies were found during the verification and the findings were submitted to the project proponent, indicated under the titles corrective action requests (CARs) and clarification requests (CLs). CARs and CLs require the PP to take relevant actions.

Hence the above steps were followed for achieving the level of assurance in verification report. Based on the process and procedures conducted, KBS confirms that the information in the MR:

- is materially correct and is a fair representation of the actual project details, and
- is prepared in accordance with VCS requirements and the applied CDM methodology for information pertaining to GHG qualification, monitoring and reporting.

The verification work is carried out as per this requirement and the verification opinion is assured, provided the credibility of all above. Details are presented in the Verification statement in section 5 below.

1.4 Summary Description of the Project

ONIL Stoves – Mexico, San Felipe Usila 1 small-scale CPA (SSC-CPA) involves the distribution and installation of ONIL Stoves to households in Mexico. This CPA is the first included under the “Distribution of ONIL Stoves – Mexico” PoA. Before the adoption of the ONIL Stove, households in Mexico used inefficient, conventional open fires.

The ONIL Stove is an improved cook stove that reduces the amount of firewood required by households by up to 58% and results in lower emissions based on its construction and design.

Since the efficiency of a traditional open fire is 10%¹ and the efficiency of an ONIL Stove is 24%, the ONIL Stove is more efficient than the traditional open fire. The stove is made of cast concrete, manufactured in Mexico, and assembled and installed locally. The stove's construction allows it to be more efficient: complete combustion and more efficient energy transfer of energy to pots ensure fast heating and fuel-efficiency. The cast concrete body is moulded in fiberglass moulds and the clay combustion chamber insulated with pumice. The fire is contained in the insulated combustion chamber, thus burning the oil vapor that is normally emitted as smoke. Energy is then efficiently transferred to cooking pots and cooking surfaces. Wood ashes or pumice provides insulation that prevents the heat from being wasted heating the stove body. Normally, hot gases do not touch the "plancha" (griddle), wasting their energy. Since the insulation fills the stove cavity to within 1 inch (2.5 cm) of the metal "plancha", all the hot gases are forced into contact with the cooking surfaces, transferring their energy to the pot and leaving only enough heat in the exhaust gases to provide a draft up the chimney. These technology improvements make the ONIL stove more efficient than a traditional open fire. The ONIL Stove is a fuel-efficient stove that reduces the amount of firewood required by households by up to 58%, compared to the baseline, and results in lower emissions based on its construction. A single ONIL Stove saves up to 2.893 tons of CO_{2e} per year.

Fuego Limpio S.A. is the implementer of this project. At the time of registration of PoA under CDM, HELPS International A.C. was the PP and project implementer for the project activity. But HELPS International A.C. withdrawn as PP in March 2017². HELPS International A.C. manufactured the ONIL stoves and distributes them to communities throughout Mexico.

A summary description of the implementation status of the technologies/ measures (e.g., plant, equipment, process, or management or conservation measure) included in the project.

This project was registered under the CDM as the "ONIL Stoves—Mexico, San Felipe Usila 1" which is first CPA included under the "PoA: Distribution of ONIL Stoves—Mexico" (CDM PoA 8521). The first ONIL stove to participate in the PoA was installed on 30-December-2009. To date, the project has installed 31,178 stoves. (3 stoves in 2009³, 4,361 stoves in 2010, 8,524 in 2011, 3,883 in 2013, 5,900 in 2014, 4067 in 2015 and 4440 in 2016) located across Mexico. Further during ongoing spot checks some of the stoves were not found in good working condition. Therefore, PP excluded those stoves from the database for this monitoring period. Total 29,495 stove considered for emission reduction calculation during this monitoring period, after consideration of non-operational status the number of effective stoves were reduced and the count was 29,495.

¹ Default value for open fires as stated in AMS II.G methodology, version 12, "Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass"

² [MoC Annex 2 \(Withdraw Project Participant\) \(unfccc.int\)](#)

³ These 3 stoves installed in 2009 could not be monitored because the area where these were installed presents security problems and are therefore inaccessible for monitoring and removed from ER calculation. Evidence of the security problems was provided to the Validation and Verification Body.

The main events towards Installation of ICS were verified below:

Event/Action	Date	Means of Verification
Date of first ICS installed	30-December-2009	Verified from the beneficiary agreement/07/ also from the start date validated in the CPA validation report. Report is publicly available on UNFCCC website.
Date of last ICS installed in the database	20-December-2016	Verified from the beneficiary agreement also from the start date validated in the CPA validation report along with the evidence shared with VVB, which is the signed agreement/7/ with the first user under the project and erstwhile CDM CPA. Report is publicly available on UNFCCC website.

2 VERIFICATION PROCESS

The verification process was carried out in line with the requirements of VCS Version 4.4. In addition, the verification team followed the guidelines of Standard auditing techniques and KBS's Procedures were also applied during the verification. A risk-based approach was followed to carry out verification and access all the factors and concerns that relate to the issuance of emission reductions from a project activity.

They include:

- Identification of all the sources contributing to the project emissions and emission reductions.
- Authenticity of the provided data is checked.
- A risk-based analysis is carried out to ensure a clear and transparent assessment. The risks involved in this process are mainly with the informational flows and data recording.

KBS follows a risk-based verification approach, wherein a desk review of the project documentation is undertaken, which is followed by onsite inspection by the members of verification team. The verification protocol is filled by the verification team that is based on standard auditing practices and VCS requirements. The verification protocol provides transparent means to record the observations by the verification team members and the non-conformities, if any. The verification protocol is an internal document, and available on request.

2.1 Method and Criteria

During the on-site verification, a random sampling approach has been used by the verification team to verify the reported values of the monitored parameters as listed in the MR which are determined through sampling by CME.

Sampling approach during verification audit is conducted in accordance with “Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities, Version 04.0” and the “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities, Version 09.0.

The verification team followed the “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities” version 09 (Applicable to the monitoring of this group) esp. for taking samples out of the CME's sample. Verification team had adopted the acceptance sampling approach to verify the sampling result of the PP for the applied verification period.

For the determination of VVB's acceptance sample size, the verification team assumed the following factors:

1. Acceptable quality level (AQL) - 0.5%
2. Unacceptable Quality Level (UQL) – 20%
3. Producer risk- 10%

4. Consumer risk- 10 %

Verification team has determined acceptance sample size for all the sample survey parameters based on the “Table. Sample size and acceptance number based on AQL, UQL, and producer and consumer risks” of standard “Sampling and surveys for CDM project activities and programme of activities” version 09.0/12/14/. From the above assumed factors, the verification team determined the minimum sample size (n) as 11 minimum samples for Clean Energy stoves under the CPAs and acceptance number (c) as Zero, chosen with the representative age group. The verification team shared the samples with PP during on-site visit.

During site visit/interviews, verification team visited sample household using the ICS system applying the random selection technique and considering equal weight to each technology implemented under the project to cross check the data reported by CME. Verification team has checked the CME samples result with the on-site interview and results, monitoring forms, technical details of the project technology/10/, households data base as per the ER sheet/2/ and found no discrepancies. The result of the VVB’s onsite survey is given below:

Parameters	VVB Sample size (n)	No of CME's record beyond unacceptable level (C)	Accepted/ Rejected
Monitoring parameters as per MR (Mean and Proportion)	11 samples	0	Accepted

None of the PP's sampling monitoring records/data results were found discrepant during the KBS verification site-visit. All the visited samples by verification team were showing similar result as reported by CME in its monitoring records. Onsite audit results/observation is found to be in line with PP's surveys and WBT results. Further, the verification team reviewed all the primary monitoring records on-site to assess the consistency of information in MR and ER calculation spreadsheet and found the monitoring data to be correctly transcribed. Based on that, verification team concludes that sampling results and values presented by PP in the MR and spread sheet and results of survey and WBT are consistent with the onsite observation and interview with the end users/PO/CME.

PP compared the survey results with the other similar projects and found that the operational rate is 91.30%, the results of the other projects were submitted to VVB's verification. PP clarified that, there was no stove champion data for comparison and no primary data available, PP has assumed 0% as stove operational rate in 2023, which has been assessed most conservative by the verification team. The operational stove percentage was used to calculate annual deration (loss rate). The annual deration was then applied to calculate year wise stove operational rates on different age groups.

Duration of Verification:

Verification Contract	23 -Sept-2022
Onsite audit	16 Feb 2023 & 17 Feb 2023 (Site visit clubbed with VCS ref. no 1803 being in the neighbouring areas)
Draft Verification Report	22- March 2023
Final Verification Report	05 March 2025

2.2 Document Review

A desk review is undertaken for the registered VCS PD, VCS MR, emission reduction calculation spread sheet/2/, and supporting documents related to the project implementation, project design, monitoring and baseline were reviewed as per VCS version 4.4 requirements, involving but not limited to:

- A review of the data and information presented to verify their completeness;
- A review of the monitoring plan and monitoring methodology, paying particular attention to the frequency of measurements and the quality assurance and quality control procedures;
- An evaluation of data management and the quality assurance and quality control system in the context of their influence on the generation and reporting of emission reductions.

The list of documents reviewed is included in the section 'References.

2.3 Interviews

Details of interviews, topics covered and additional information are presented below:

Team Leader, Technical Expert: Mr. Sanjay Kandari (Remotely)

Local Expert: David González (Physically)

Dates:	16 Feb 2023 & 17 Feb 2023	
Key points discussed:	Name of person, interviewed	Designation, Organization
The questions asked were following but not limited to: I. Sampling requirements II. Data base maintenance III. Operational data, Calibration, Data collection, IV. QA/QC procedures, Calculation of ERS, V. Methodology of survey and randomization of population. VI. Desired con/precession and actual	Mr. Tridip Goswami	Managing Director, C-Quest Capital (Entity responsible for preparing MR/ER sheet and other GHG requirements).
	Ms. Tanya Sharma	Manager, - C-Quest Capital.
	Mr. Gaurav Vishvanath Pethakar	

con/precession calculations procedure. VII. Double Counting VIII. The repair and maintenance process of stoves having age greater than 10 years		
Monitoring Survey, Baseline. The questions asked were following but not limited to: I. When did you purchase the ICS. II. Which model you are using. III. What was the baseline technology you were using prior to purchase of ICS. IV. Whether you have been surveyed by the CQC or their representative. V. What questions the surveyor asked. VI. Do you still use the baseline stoves? VII. If yes, then how many meals per day you cook in the project stove and how many in baseline stove. VIII. Did you faced any challenges while operating the ICS? IX. If you discontinue the use of project stove then from when? X. Any employment generated by the stove manufacturer (To confirm the SDG) XI. Any training imparted by the stove manufacturer (To confirm the SDG)	Cresencia Garcia Elealeth Garcia Ausktecbata Roiz Altonso Domngo Velasqcez Epelania Pascal Maria Hernande Ana Raz Meelcina Ana Maetinez Harnestina Hernandoz Manao Ramive	End Users

2.4 Site Visits

During the on-site verification, a random sampling approach has been used by the verification team to verify the reported values of the monitored parameters as listed in the MR which are determined through sampling by PP.

Sampling approach during verification audit is conducted in accordance with “Guidelines for Sampling and Surveys for CDM Project Activities and Programme Activities, Version 04.0”/14/ and the “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities, Version 09.0/14/.

The verification team followed the “Standard for Sampling and Surveys for CDM Project Activities and Programme Activities” version 09 (Applicable to the monitoring of this group) esp. for taking samples out of the CME’s sample. Verification team had adopted the acceptance sampling approach to verify the sampling result of the PP for the applied verification period.

2.5 Resolution of Findings

KBS applies the risk-based approach aimed at focusing on high-risk issues to the verification results whilst not omitting any part of the mandatory processes. A few discrepancies were found during the verification and the verification report was submitted to the project proponent, indicated under the titles corrective action requests (CARs) and clarification requests (CLs). CARs and CLs require the PP to take relevant actions. Criteria for judging items as CAR or CL are as follows:

Corrective action request (CAR):

- the project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions
- the Voluntary Carbon Standard’s requirements have not been met, or
- there is a risk that emission reductions cannot be monitored or calculated.

Clarification request (CL):

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

FAR (Forward Action Request):

FARs is to be raised to highlight issues related to project implementation that require review during the first verification of the project activity. FARs does not relate to VCS requirements for registration.

CARs and CLs are to be resolved or closed out if the PP modifies the project description, rectifies the MR or provides adequate additional explanations or evidence that satisfies the concerns. If

this is not completed, the project activity cannot be recommended for issuance under VCS registry.

The monitoring report was revised addressing the CARs & CLs issued by KBS. After reviewing the revised MR; resolving the CARs & CLs raised and outstanding concerns, KBS issues this final verification report and opinion.

The list of CARs/CLs raised, and the response provided, the means of verification, reasons for their closure and references to correction in the MR are provided in appendix 2 of this report. The revised MR with changes incorporated as per the issues raised were rechecked with the documentary evidence and found to be inline.

2.5.1 Forward Action Requests

No FAR was issued during the current verification, neither any FAR raised during the previous verification.

2.6 Eligibility for Validation Activities

N/A as the assignment is explicit the verification activity.

3 VALIDATION FINDINGS

3.1 Participation under Other GHG Programs

“Distribution of ONIL Stoves – Mexico, San Felipe Usila 1” is registered as a Small-Scale Component Project Activity under the Clean Development Mechanism (CDM) and under the Programme of Activities “Distribution of ONIL Stoves – Mexico” (Ref. PoA 8521).⁴

The project is not claiming any CERs for the same vintages (equivalent to the monitoring period) and this has been verified from the CDM PoA webpage. PP has also submitted a written declaration/11/ that the project will not claim the GHG benefits in any other scheme.

⁴ CDM document can be accessed through:

https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/2BH1T0SFERD67JCZXAIWMKLO8PN5UQ/view (PoA) and https://cdm.unfccc.int/ProgrammeOfActivities/cpa_db/3AKNYPF29XVHJ1WB6LQ45MGOTS8EC0/view (Mexico, CPA 002).

3.2 Methodology Deviations

This project did not apply any methodology deviations.

3.3 Project Description Deviations

Sampling method: The sampling method applied in the registered monitoring plan is multi-stage sampling. Multi-stage sampling is a sophisticated method which is not easy to be implemented and the data analysis is difficult. Given that the population being studied is relatively homogeneous with respect to the parameter being studied, therefore simple random sampling was chosen to replace the existing sampling method from first VCS verification. The deviation in the sampling method does not impact the applicability of the methodology, additionality, or appropriateness of the baseline scenario as indicated in section 3.20.2 (2) of the VCS standard version 4.4. Considering the homogenous nature of the population under the project, the sampling approach has been revised and complies to the indicated clause in the VCS standard 4.4. The detailed description of the approach adopted for sampling using simple random approach has been elaborately presented in the MR and verified adequate by the verification team. The approach is also consistent with the previous verifications approved for issuance by VERRA.

3.4 Grouped Project

N/A as the project is not registered as group project under VCS.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

This project was registered under the CDM as the “ONIL Stoves—Mexico, San Felipe Usila 1” which is first CPA included under the “PoA: Distribution of ONIL Stoves—Mexico” (CDM PoA 8521). The first ONIL stove to participate in the PoA was installed on 30-December-2009. To date, the project has installed 31,178 stoves. (3 stoves in 2009⁵, 4,361 stoves in 2010, 8,524 in 2011, 3,883 in 2013, 5,900 in 2014, 4067 in 2015 and 4440 in 2016) located across Mexico. Further during ongoing spot checks some of the stoves were not found in good working condition. Therefore, PP excluded those stoves from the database for this monitoring period. Total 29,495 stove considered for emission reduction calculation during this monitoring period. After consideration of non-operational status, the number of effective stoves were reduced and the count was 30,548.

⁵ These 3 stoves installed in 2009 could not be monitored because the area where these were installed presents security problems and are therefore inaccessible for monitoring and removed from ER calculation. Evidence of the security problems was provided to the Validation and Verification Body.

All the data recorded during stove registration process was captured via hard copy of registration card. The information collected is then transferred to a project database.

The project stoves have a life of not less than 10 years and the useful life till 20 years as per the longevity certificate/10/ furnished to verification team by the stove manufacturer. The age of the stoves were verified in context of the para 40 of the applied CDM methodology AMS IIG, version 12.

Para 40 of the CDM methodology AMS IIG, version 12 lays down:

If project devices are retrofitted/repared before or at the end of the device's estimated life span, emission reductions may be claimed for these devices during the extended lifetime only if the details of the retrofits/repairs undertaken (e.g. parts replaced, specifications followed, personnel conducting the repairs and date of retrofitting) on each device are documented and in addition, one of the following options is implemented:

a) Extended lifetime is demonstrated through a warranty from the original manufacturer, or a guarantee from a company with demonstrated experience in cook stove repair that assures the performance of the stove in its entirety comparable to the original device including with regard to efficiency, safety and indoor emissions; or

(b) Extended lifetime or the durability of the retrofitted device is demonstrated through a durability test performed according to requirements in ISO 19867-1 for durability or a comparable national standard. Certification by a relevant national standards body or an appropriate certifying agent recognized by that body (with reference to Data/Parameter Table 20 of the methodology) may be supplied based on sample tests specified by the standard applied.

The PP is complying with the option (a) of the cited para of applied methodology. The extended lifetime certificate by the original manufacturer was furnished to the verification team which categorically states that the projects stoves can run up to 20 years with periodic operation and maintenance/10/, VVB would like to quote the exact text as below:

"The average life of the ONIL stoves manufactured by Fuego Limpio is no less than 10 years and can reach up to 20 years with periodic maintenance and replacement of metal parts after their useful life standard".

It was verified during the onsite audit wherein the VVB's team visited the site and selected the old vintage stoves too (e.g. stove id 4911201112295) , and concluded that the stoves were in the working condition. The survey undertaken by the PP as part of the usage survey also had the reasonable (more than 70%) sample size stoves which has the more than 10 years lifetime.

Further the verification team found that the implementing partner of this project visits the beneficiaries and undertakes the repair work/10/ which is formally recorded in a form that captures the details of materials used in repairing the stoves and an undertaking by the end-user to continue usage/10/ of the stoves based on the instructions provided by the IP staff. The maintenance record/10/ were provided to the VVB as an evidence, the same were also confirmed during the onsite audit by the VVB's team while interviewing the HHs as part of

acceptance sampling.

The website of the organization responsible for repair work verified (<http://fuegolimpio.com/nosotros/>) and concluded that it is a competent entity and one of the stove manufacturer in the project. The repair evidence records were furnished to the verification team pertaining to the monitoring period and it was concluded that there are adequate provisioning of repair and maintenance is in place.

Therefore, based on the physical inspections of stoves and its built quality which is made of concrete and Reinforcing steel: high strength, grade 70, minimum yield strength (Fy) of 5000 Kg/cm², its process manufacturing complies with the German standard DIN 488 and the American standards ASTM 496 and 497, verified from longevity certificate provided by the manufacturer, and onsite inspection. VVB confirms that the project complies with the requirements of para 40, option (a) of the CDM methodology AMS IIG, version 12.

Based on the physical inspection and the reviewed project documentation like the technical specification, beneficiary agreements, monitoring database etc. the verification team confirms that the project was implemented and operated as described in the VCS PD. Further, the verification team confirms that-

- There is no material discrepancy between project implementation and the project description in the VCS PD.
- The monitoring plan is completely implemented and is suitable with actual monitoring system (i.e., process and schedule for obtaining, recording, compiling and analysing the monitored data and parameters)
- The project has not participated or been rejected under any other GHG programs and further has not received or sought any other form of environmental credit since validation.

Ownership:

C-Quest Capital LLC (PP, at the verification) has declared that the project is registered with VCS registry, as declared in VCS-PD. Thus, emission reductions generated by project will be solely claimed by PP and PP has the right of use and verified by reviewing the beneficiary agreements signed with the households, which is acceptable.

Sustainable Development Contributions:

As confirmed during the onsite audit, the project contribution towards sustainable development is established in line with the sustainable development indicators framed by the UN SDG and has the benefits such as reduction in indoor air pollution, reduction in time spent and distance travelled for fuel wood collection, conservation of forest by reducing rate of forest degradation

/deforestation and thereby reducing GHG emissions from the environment. There are other economic benefits such as opportunities for local communities involved in monitoring, training of users, undertaking periodic maintenance and post life time replacement.

Row number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime	Means of Verification
1	4.3	Project specific indicator: Number of individuals who received any informal training	Increase	Vocational training and project related training with respect to successful implementation of a programme, appropriate methods of conducting surveys, carrying out maintenance activities etc. in addition to issues related to climate change was provided to 5 individuals associated with the project.	Project specific indicator: Number of individuals who received any informal training	Training records furnished to verification team, based on the review of training records, it was confirmed that the HHs were trained by the PP. Total 05 individuals were trained as per the records/11/ furnished to the verification team.
2	7.1	7.1.2 Proportion of population with primary reliance on clean fuels and technology	Increase	Increasing access to clean cooking technology by distributing a set of project stoves in 29,495 households.	7.1.2 Proportion of population with primary reliance on clean fuels and technology	This is directly related to the GHG calculations, the database beneficiary agreements inter alia verified as part of project implementation. The number of stoves reported are consistent with the database and therefore represents the HHs and corresponding SDG indicator.

4	13.0	Project Specific indicator: Reduction in emissions as compared to baseline scenario (open fire)	Increase	Total emission reduction in the current monitoring period is 7,614 tCO ₂ eq.	Project Specific indicator: Reduction in emissions as compared to baseline scenario (open fire)	The calculation is verified in the subsequent sections of verification report.
5	15.3	15.2.1 Progress towards sustainable forest management by increasing above ground biomass in forests	Decrease	The project has resulted in saving 0.55 tons of non-renewable biomass per stove during monitoring period leading to total savings of 16,846 tons of biomass in 29,495 households.	15.2.1 Progress towards sustainable forest management by increasing above ground biomass in forests	The calculation is verified in the subsequent sections of verification report as part of the GHG monitoring parameters.

Supply Chain (Scope 3) Emissions: As per Section 3.23.9 of the VCS Standard, v4.4, the “producer(s) or retailer(s) of the impacted good or service are known but not involved in the project or do not have a website”. The current project has multiple PPs as indicated in section 1.3 of the MR. For the current project HELPS International, one of the PP, itself is involved in the manufacturing and distribution of the ONIL stoves at the project locations and hence the VCUs rights also are shared by the PP. A clear communication about the VCU generation, and their rights have been maintained among both the PPs of this project. A copy of mail explaining this communication has been provided in the appendix section of the MR and furnished to VVB.

Management and operational system:

Verification team was able to verify that authorities and responsibilities for monitoring and reporting of all data related to the emission reductions were clearly defined for the monitoring period from 01-November-2021 to 31-January-2023 (Inclusive of both days).

The verification team has interviewed the personnel who is involved in the monitoring of the parameters that are used to determine the emission reductions of the VER project. It is confirmed based on the interviews that the team is competent enough to monitor the parameters as described in the monitoring plan.

As discussed above, the verification team concludes that management and operational system of the project is implemented and operated well. Thus, it ensures the quality of data which is required in calculating the emission reductions.

Implementation status of the monitoring plan:

During the verification, all relevant monitoring parameters of the registered monitoring plan have been verified with respect to the appropriateness of the verification method; the correctness of the values applied for ER calculation, the accuracy and applied QA/QC measures. All monitoring parameters have been measured / determined without material misstatements and are in line with all applicable standards and relevant requirements. It is confirmed that the monitoring mechanism is effective and reliable.

Therefore, from the document review and onsite inspection, it is confirmed that all the parameters were monitored in accordance with the registered monitoring plan during the monitoring period.

4.2 Safeguards

4.2.1 No Net Harm

The project activity is utilization of Improved Cook stove for cooking in rural households and does not involve any negative impact compared to the baseline stoves. Assessment team confirms the same based on its local and sectoral expertise.

4.2.2 Local Stakeholder Consultation

During current monitoring period no complains raised by stakeholders, also no issues were identified in previous stakeholder meeting, which requires change in process or mitigation measures. The PP has the continuous feedback mechanism as part of monitoring surveys. The survey forms revealed that the users had no complains.

VVB interviewed the HHs during the onsite assessment that, whether any complaints have been raised by them, the HHs confirmed that no complaint was registered. Moreover, the PP has the ongoing mechanism as verified from MR, interview and the survey forms/07/ which were one of the ways to collect the feedback as part of project surveys.

4.3 AFOLU-Specific Safeguards

This is not an AFOLU project.

4.4 Accuracy of GHG Emission Reduction and Removal Calculations

The verification team has reviewed the emission reduction (ER) spread sheet/2/ and checked all the formulae and verified them to be correct and in line with the monitoring plan of the VCS PD and the applied monitoring methodology.

The monitoring system and all applied procedures are in accordance with the monitoring plan contained in the registered VCS-PD and the applied methodology AMS II.G., version 12 “Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass”/14/, based on the information included in the final monitoring report, there are several procedures for data collecting depending on the methodology applicable for each step of the project. Organizational Structure has been provided in the MR along with the roles and responsibilities.

The verification team has checked the ex-ante parameters and data stated in MR and compared with relevant section of the validated VCS PD that whether all parameters fixed ex-ante for the crediting period have been applied correctly.

The Ex-ante parameters are as follows:

S. No.	Ex-ante Parameter and unit	Description	Value	Consistent with the respective VCS PD
1	$f_{NRB,y}$ (Percentage)	Fraction of non-renewable biomass saved by the project activity	0.70	The value is fixed ex-ante and considered at validation (RCP). Therefore, the value has been fixed at the time of validation, subsequently applied for all the instances. The verification team has reviewed the f_{NRB} calculations and found them to be credible.
2	B_{old} (tons/year)	Annual quantity of woody biomass that would have been used in the absence of the project activity to generate useful thermal energy equivalent to that provided by the project device type i and batch j	6.597tons/HH/year	The value is fixed ex-ante and considered at the time of validation and validated by the validating VVB. Therefore, the value has been fixed at the time of validation, subsequently applied for all the instances.
3	$NCV_{biomass}$ (TJ/tonne)	Net calorific value of the non-renewable woody biomass that is substituted	0.0156 (TJ/tonne)	Default value as per the methodology is applied which is in accordance with the requirements as verified by the verification team. The values were fixed at the time of validation. Hence accepted by the verification team.
4	η_{old} (Percentage)	Efficiency of baseline stove	0.10 for wood fuel project (wood-fuel ICS) instance	The values were fixed at the time of validation of VCS PD and verified by the verification team.
5	$EF_{projected_fossilfuel}$	CO2 emission factor for the use of wood fuel in baseline scenario	68.6 tCO ₂ /TJ	Default value in methodology. The values were fixed at the time of validation of validation. Hence

				accepted by the verification team.
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Monitored Parameters (Ex-Post)

The parameters and sampling measures taken are detailed below:

Parameter	Description of Parameter	Verified Value	Sampling approach (outcome in brackets)	Verification Approach by VVB
$N_{0,i,j}$	Number of commissioned project devices of type i and batch j	29,495 ⁶	Actual installation record as stored in database	Verified from the database and also with the agreement signed with the end users. The number is before applying the non-use factor into account pertaining to the monitoring period.
$N_{y,i,j}$	Number of project devices of type i and batch j operating during year y	For Year 2021: 14.29% For Year 2022: 7.14% For Year 2023: 0%	Visual inspection of the premises to see if the project stove is operational and in use. Interview with end user if required to verify that project stove is still in use (Yes/No)	Verification team concluded that the monitoring parameter is monitored in line with the monitoring requirements. The parameter is monitored through the "Stove distribution database and survey records". The database has been checked and found that the same is monitored by the by PP on at least biennial basis however deviation

⁶ Details provided in Sec 1.1 of this MR

				sought during this verification as the same has been verified under the deviation section. Verification team has verified the monitoring parameter through Stove distribution database and survey records, onsite assessment and from the details given under the ER sheet and found consistent. The sampling approach and the results of the sampling by VVB are explained in the section 2.1 of this report. Moreover, it was observed by the VVB that the usage rate was higher than the previous verification period. 98.96% stoves were found operational during the monitoring period, the VVB undertaken the acceptance sampling test and found that the survey undertaken by the PP is adequately reported the usage rate.
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				Monitoring for the parameters $n_{y,i}$ and μ_y has been conducted from 31 March-2021 to 21-May-2021. The previous WBT for the parameter η new, I, for eight Vintages (i.e. vintages 2010, 2011, 2013, 2014, 2015, 2016, 2017 & 2018) were conducted from 15-February-2020 to 22-February-2020. The biennial frequency is mentioned in the registered VCS PD, therefore the results can be applied one year retroactive and one year after the survey. Verification team confirms the frequency meets the requirements of VCS PD. Based on the VERRA review of this project under Section 6 of the VCS Registration and Issuance Process, the verification team raised the clarification to PP and sought the primary data of the sampling undertaken by the PP. PP clarified that they
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				have no access to the primary data at this juncture and used the conservative approach by using the usage rate/operational rates of other projects in the region. Based on the same, the annual degradation was applied in the operational rate, which resulted in the operational rate being most conservative. Hence, the verification team accepted the approach and closed the finding. Please refer to the CL#08 in the Appendix wherein the resolution of finding is provided.
B_{old} adjusted	If baseline stoves continue to be used, adjustment ensures that fuel wood consumption of those stoves is excluded from B_{old}.	$B_{old_adjusted} = B_{old} \times (1 - \mu_y)$ =6.5888 Tonnes	If baseline stoves continue to be used, adjustment ensures that fuel wood consumption of those stoves is excluded from B_{old}.	According to AMS II.G., version 12, Where the project households continue to use baseline cookstoves along with improved cookstoves, B_{old} shall be adjusted ex-post based on the percentage of project households found to continue

				such practice. For such cases, the quantity of woody biomass saved due to implementation of improved cook stoves shall be calculated using an adjusted value to account for ex-post use of baseline stoves in addition to improved cookstove. The value is adjusted based on the sampled parameter μ_y. The value of μ_y was arrived by using the sampling, the approach is verified below. The calculated value of Bold adjusted was found adequate by the verification team and discount was applied appropriately in the ER calculations.														
$\eta_{new,i,j}$	Efficiency of the project device of each model/vintage	<table> <tr> <th>Vintage</th> <th>Efficiency</th> </tr> <tr> <td>$\eta_{new,2010}$</td> <td>23.59%</td> </tr> <tr> <td>$\eta_{new,2011}$</td> <td>23.65%</td> </tr> <tr> <td>$\eta_{new,2013}$</td> <td>23.38%</td> </tr> <tr> <td>$\eta_{new,2014}$</td> <td>23.82%</td> </tr> <tr> <td>$\eta_{new,2015}$</td> <td>23.80%</td> </tr> <tr> <td>$\eta_{new,2016}$</td> <td>23.89%</td> </tr> </table>	Vintage	Efficiency	$\eta_{new,2010}$	23.59%	$\eta_{new,2011}$	23.65%	$\eta_{new,2013}$	23.38%	$\eta_{new,2014}$	23.82%	$\eta_{new,2015}$	23.80%	$\eta_{new,2016}$	23.89%	Project Stoves are tested using WBTs for thermal efficiency (Interview to check if tests were conducted).	The parameter “Efficiency of the project design I and batch j implemented as part of the project activity” (η_{new}) is a monitoring parameter as per the registered VCS PD. As per the VCS PD,
Vintage	Efficiency																	
$\eta_{new,2010}$	23.59%																	
$\eta_{new,2011}$	23.65%																	
$\eta_{new,2013}$	23.38%																	
$\eta_{new,2014}$	23.82%																	
$\eta_{new,2015}$	23.80%																	
$\eta_{new,2016}$	23.89%																	

				the source of data for the above parameter is “representative sampling testing based on Water Boiling Tests” The monitoring of the parameter has been conducted following the VCS PD. Each vintage representation for the WBT test was verified by the VVB by reviewing the WBT results. The verification team determined the implementation and operation management system through the audit interview with the PP. During onsite audit interview, verification team checked the procedures implemented for inclusion of project instances, roles and responsibilities, quality check etc. The verification team confirms that the implementation and operation of the project management system, including the record-keeping
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				system, complies with the registered PD. Verification team has further checked the monitored data through onsite assessment interview, all the Efficiency test reports for ICS and the ER sheet. The data was found consistent. Based on local and sectoral expertise; verification team found the test reports in compliance with WBT protocols. The calibration status of the equipment were also furnished to verification team and it was concluded that the WBT undertaken with the calibrated instruments. The calibration certificates were furnished to verification team, the details of the equipment is included in Appendix 4 of verification report. WBT for the parameter $\eta_{new,i}$ were
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				conducted from 01 April-2021 to 22-May-2021. AMS II.G version 12, paragraph 48 for biennial sampling and 95% confidence interval & 10% precision for biennial sampling. The sampling achieved the desired confidence precession of 95/10 and verified with the sampling spreadsheet furnished to verification team.
μ _y	Adjustment to account for any continued use of pre-project devices during the year y	0.0104	Interview with end user and visual inspection to determine if a pre-project (replaced) stove is still being used in addition to project stove (Yes/No)	The parameter is monitored through the “Stove distribution database and sample survey records”. The database has been checked and found that the same is monitored by the CPA implementer and CME on at least biennial basis. The same was also confirmed during the onsite audit.

				The value arrived for this parameter (adjustment fractions) have been checked from the Sampling survey data and results, further cross checked the samples with the end user beneficiary agreement, excel Database, and household survey questionnaires and found to be correct. The value arrived for the fractions of days have been checked from the End user beneficiary agreement, Excel Database, and Household Usage Survey and found correct. This accounts for the exclusion of the fuel wood consumption of baseline stoves from the ER calculation in accordance with methodology Verification team has checked the samples based on the acceptance sampling and found OK. Hence the verification team
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				was able to conclude that this parameter is being monitored & recorded as per the monitoring plan. Verification team has checked the values of parameter in the ER sheet through sampling out of the samples selected by the CME through sample check of the Monitoring forms and site visit interview check. The sampling approach and the results of the sampling by VVB are explained in the section 2.1 of this report. Hence the verification team was able to conclude that this was monitored correctly. PP has applied the lower bound in the ER calculation as during the survey the desired confidence/precision 95/10 was not met. The approach has been considered by VVB adequate and meeting the sampling requirements
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				The parameter is monitored through the “Stove distribution database and sample survey records”. The database has been checked and found that the same is monitored by the CPA implementer and CME on at least biennial basis. The same was also confirmed during the onsite audit. The value arrived for this particular parameter (adjustment fractions) have been checked from the Sampling survey data and results, further cross checked the samples with the end user beneficiary agreement, excel Database, and household survey questionnaires and found to be correct. The value arrived for the fractions of days have been checked from the End user beneficiary agreement, Excel
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				Database, and Household Usage Survey and found correct. This accounts for the exclusion of the fuel wood consumption of baseline stoves from the ER calculation in accordance with PD requiring a conservative approach to be taken regarding the replacement of traditional stoves AMS IIG). Verification team has checked the samples based on the acceptance sampling and found OK. Hence the verification team was able to conclude that this parameter is being monitored & recorded as per the monitoring plan. Verification team has checked the values of parameter in the ER sheet through sampling out of the samples selected by the PP through sample check of the Monitoring forms and site visit interview check. The
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				sampling approach and the results of the sampling by VVB are explained in the section 2.2 of this report. Hence the verification team was able to conclude that this was monitored correctly.
$t_{y,j}$	Fraction of CPA monitoring year (i) elapsed since purchase of stove	$t_{2021,j} = 1.00$ [average] $t_{2022,j} = 1.00$ [average] $t_{2023,j} = 1.00$ [average]	Cross checks and spot checks in the database to ensure installation/registration dates are correctly captured.	Days in operation during monitoring period divided by total number of days in monitoring period. This calculation is applied to every ONIL stove in the database. The calculation approach verified in ER sheet for the application of this parameter and found adequate by the verification team.

Two different type of sampling surveys were performed: one gathered information needed for the monitoring of $N_{y,i,j}$ and μ_y another one to the monitoring of $\eta_{new,i,j}$ parameter.

Sampling captured information on monitoring ariables with required confidence/precision (in that case as a single CPA is sampled, it is required a 95/10 confidence/precision for biennial monitoring). A simple random sampling was used.

The result of actual sampling are below, the same have been verified from the sampling sheet:

Monitored Parameter	Sample size	Survey Results (%)	Precision achieved (%)
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Proportion of stoves in operation (ny,i)	96	98.96	1.72%
Continue use of baseline stoves (μy)	96	1.04	1.72%

Emission reduction (ER)

The methodology does not calculate baseline and project emissions separately. The steps taken and the equations and parameters applied in the VCS-PD to calculate the project emissions, baseline emissions, leakage and emission reductions comply with the requirements of the selected methodology including applicable tool(s).

Quantification of baseline emissions:

According to methodology AMS II.G., version 12 “Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass”, emission reductions shall be calculated as:

$$ER_{y,i,j} = B_{y,savings,i,j} \times N_{o,i,j} \times n_{y,i,j} \times \mu_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossil\ fuel}$$

According to footnote 20 under para 50 (c) of the applied methodology, “the methodology allows the use of a net to gross adjustment factor of 0.95 in lieu of conducting a survey to account for leakage emissions”.

Therefore:

$$ER_{y,i,j} = B_{y,savings,i,j} \times N_{o,i,j} \times n_{y,i,j} \times \mu_y \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected_fossil\ fuel} \times 0.95$$

Where:

$ER_{y,i,j}$ Emission reductions by project device of type i and batch j during year y (tCO₂e)

$B_{y,savings,i,j}$ Quantity of woody biomass that is saved per cookstove device of type i and batch j during year y (tonnes)

$f_{NRB,y}$	Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass (0.72)
$NCV_{biomass}$	Net calorific value of non-renewable woody biomass that is substituted (IPCC default value for fuel wood 0.0156 TJ/tonne)
$EF_{projected_fossilfuel}$	Emission factor for the substitution of non-renewable woody biomass by similar consumers. Use a value of 68.6 tCO ₂ /TJ
$NO_{i,j}$	Number of project devices of type i and batch j commissioned (number)
$n_{y,i,j}$	Proportion of commissioned project devices of type i and batch j ($NO_{i,j}$) that remain operating in year y (fraction)
μ_y	Adjustment to account for any continued use of pre-project devices during the year y
0.95	net to gross adjustment factor to account for leakage

To calculate $B_{y,savings,i,j}$, we use para 32 Option 3 equation 7 of applied methodology AMS II.G

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

Where:

$B_{old,i,j}$	Annual quantity of woody biomass that would have been used in the absence of the project activity to generate thermal energy equivalent to that provided by the project device type i and batch j (tonnes/year)
$\eta_{old,i,j}$	Efficiency of the old devices being replaced by project devices of type i and batch j (fraction). A default value of 0.10 may be optionally used if the replaced system is three-stone fire using firewood (not charcoal), or a conventional device with no improved combustion air supply or flue gas ventilation, that is without a grate or a chimney.
$\eta_{new,i,j}$	Efficiency of the project device i and batch j (fraction), as determined using the Water Boiling Test (WBT) protocol.

$$B_{y,savings} = B_{old,adjusted} \left[\sum_{i=1}^n N_{y,i} \left(1 - \frac{\eta_{old}}{\eta_{new,i}} \right) \right]$$

Where:

$N_{y,i}$	Total number of stoves in operation for a full monitoring period equivalent in the project
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η_{old} Efficiency of the baseline system/s being replaced. The 0.10 default value is used as the replaced systems are three-stone fires or conventional systems lacking improved combustion air supply mechanism and flue gas ventilation system i.e., traditional stoves.

$\eta_{new,i}$ Efficiency of the system being deployed as part of the project activity (fraction), as determined using the Water Boiling Test (WBT) protocol.

$$\eta_{old} = 0.10$$

$$\eta_{new,2010} = 0.2359$$

$$\eta_{new,2011} = 0.2365$$

$$\eta_{new,2013} = 0.2338$$

$$\eta_{new,2014} = 0.2382$$

$$\eta_{new,2015} = 0.2380$$

$$\eta_{new,2016} = 0.2389$$

Monitoring Period: 01-November-2021 to 31-December-2021

$$\begin{aligned} B_{2021,savings} &= 6.5888 \times [591 \times (1 - 0.1/0.2359) + 1,216 \times (1 - 0.1/0.2365) + 550 \times (1 - 0.1/0.2338) + 776 \times (1 - 0.1/0.2382) + 487 \times (1 - 0.1/0.2380) + 594 \times (1 - 0.1/0.2389)] \\ &\quad \times (61/365) \\ &= 2,681.92 \text{ tonnes} \end{aligned}$$

$$ER_{2021} = 2,681.92 \times 0.70 \times 0.0156 \times 68.6 \times 0.95$$

$$ER_{2021} = 1,908 \text{ tCO}_2 \text{ (Round down)}$$

Monitoring Period: 01-January-2022 to 31-December-2022

$$\begin{aligned} B_{2022,savings} &= 6.5888 \times [295 \times (1 - 0.1/0.2359) + 607 \times (1 - 0.1/0.2365) + 275 \times (1 - 0.1/0.2338) \\ &\quad + 388 \times (1 - 0.1/0.2382) + 244 \times (1 - 0.1/0.2380) + 297 \times (1 - 0.1/0.2389)] \times (365/365) \\ &= 8,018.16 \text{ tonnes} \end{aligned}$$

$$ER_{2022} = 8,018.16 \times 0.70 \times 0.015 \times 68.6 \times 0.95$$

$$ER_{2022} = 5,706 \text{ tCO}_2 \text{ (Round down)}$$

Monitoring Period: 01-January-2023 to 31-January-2023

$$B_{2023, \text{savings}} = 6.5888 \times [0 \times (1 - 0.1/0.2359) + 0 \times (1 - 0.1/0.2365) + 0 \times (1 - 0.1/0.2338) + 0 \times (1 - 0.1/0.2382) + 0 \times (1 - 0.1/0.2380) + 0 \times (1 - 0.1/0.2389)] \times (31/365)$$

$$= 0 \text{ tonnes}$$

$$ER_{2023} = 0 \times 0.70 \times 0.015 \times 68.6 \times 0.95$$

$$ER_{2023} = 0 \text{ tCO}_2 \text{ (Round down)}$$

$$ER_{\text{Total}} = ER_{2021} + ER_{2022} + ER_{2023}$$

$$ER_{\text{Total}} = 1,908 \text{ tCO}_2 + 5,706 \text{ tCO}_2 + 0 \text{ tCO}_2$$

$$ER_{\text{Total}} = 7,614 \text{ tCO}_2 \text{ (round down)}$$

4.5 Quality of Evidence to Determine GHG Emission Reductions and Removals

All relevant documents were checked to assess the correctness and quality of data submitted by the project participants, which are used to determine emission reductions.

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 onsite audit discussion and inspection. Hence, the verification team confirms that the monitoring system ensures required quality of the monitoring system to ensure the quality of the monitored data. All internal data are subjected to QA/QC measures.

The verification team can confirm that sufficient evidence is available for the whole monitoring period and the same is verifiable and that the data collection system meets the requirements of the monitoring plan and the applied methodology according to the assessment carried out on site and in the document review

Verification team confirms that the quality of evidence to determine the GHG reductions and removals produced was found satisfactory. The detailed information flow with the roles and responsibilities of the individuals and the monitoring system have been provided in the VCS- MR.

It was also verified through onsite audit inspection that the team involved in the monitoring of project activity is well experienced. Hence, the verification team concludes that competent staff is employed by the project proponent to carry out the relevant tasks with sufficient accuracy.

4.6 Non-Permanence Risk Analysis

As the project activity is a non-AFOLU project activity no risk related to non-permanence has been identified for the project activity.

5 VERIFICATION OPINION

KBS Certification Services Ltd. has been contracted by, 'C-Quest Capital Malaysia Limited' authorized by PP, 'C-Quest Capital LLC' to undertake verification and certification for the greenhouse gas (GHG) emission reductions reported from 'Distribution of ONIL Stoves – Mexico, San Felipe Usila 1' (VCS ID 1216) for the monitoring period 01-November-2021 to 31-January-2023 (Inclusive of both days), under the crediting period 20-December-2020 to 19-December-2030, in the initial monitoring report version 01 dated 27-Jan-2023, with regard to the relevant requirements of VCS Standard Version 4.4.

The calculation and determination of GHG emission reductions from the project is the responsibility of the management of the PP. The development and maintenance of records and reporting procedures are in accordance with the Monitoring Report version 01.4, dated 27-January-2025 As a result of the verification, the verification team confirms that:

- All operations of the project are implemented and installed as planned and described in the project description.
 - The monitoring system is in place and functional.
 - The installed equipment essential for generating emission reductions runs reliably.
 - The GHG emission reductions are calculated without material misstatements in a conservative and appropriate manner.
- Based on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these, KBS planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that this reported amount of GHG emission reductions for the period is fairly stated.

Verification period: From 01-November-2021 to 31-January-2023 (Inclusive of both days)

Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)

2021 (01-Nov-2021 to 31-Dec-2021)	1,908	0	0	1,908
2022 (01-Jan-2022 to 31-Dec-2022)	5,706	0	0	5,706
2023 (01-Jan-2023 to 31-Jan-2023)	0	0	0	0
Total	7,614	0	0	7,614

<u>Ex-ante emissions reductions/removals (tCO₂e)</u>	<u>Achieved emissions reductions/removals (tCO₂e)</u>	<u>Percent difference</u>	<u>Justification for the difference</u>
100,133	7,614	-92.40%	For ex-ante ER estimates it is assumed that 100% project devices are being used. But during the current MP, PP has assumed 0% as stove operational rate in Yr 2023, and the operational stove percentage was used to calculate annual deration (loss rate). The annual deration was then applied to calculate year wise stove operational rates for respective years i.e., 14.29% (Yr2021), 7.14%(Yr2022) & 0% (Yr 2023). Achieved emissions reductions during current monitoring period is -92.40% less than Ex-ante emissions reductions.

Location: Faridabad

Date: 03/04/2025

A handwritten signature in black ink, appearing to be 'Praveen N Urs', written in a cursive style.

Authorized Signatory: Praveen N Urs

Designation: Managing Director

KBS Certification Services Ltd.

APPENDIX 1.ABBREVIATIONS

Abbreviations	Full texts
BE	Baseline Emissions
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CDM EB	CDM Executive Board
CERs	Certified Emission Reductions
CL	Clarification Request
CO ₂ e	Carbon dioxide equivalent
COP	Conference of Parties
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Emission Factor
ERs	Emission Reductions
FAR	Forward Action Request
GHGs	Greenhouse Gas(es)
HHs	Households
LE	Leakage Emissions
MR	Monitoring Report
MP	Monitoring Plan
PE	Project Emissions
PDD	Project Design Document
PS	Project Standard
PCP	Project Cycle Procedure
PP	Project Participant
QA/QC	Quality Assurance/Quality Control
SDG	Sustainable Development Goals
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Voluntary Carbon Standard
VVB	Validation & Verification Body
VVS	Validation & Verification Standard
WBT	Water Boiling Test

APPENDIX 2: REFERENCES

Ref	Document
/01/	Monitoring Report titled: 1. Distribution of ONIL Stoves – Mexico, CPA 002 Version 01 dated 27 Jan 2023 2. Distribution of ONIL Stoves – Mexico, CPA 002 Version 1.1 dated 13 March 2023 3. Distribution of ONIL Stoves – Mexico, CPA 002 Version 1.2 dated 05 July 2023 4. Distribution of ONIL Stoves – Mexico, CPA 002 Version 1.4 dated 27 Jan 2025
/02/	ER sheet corresponding to: . / /2.1/ Distribution of ONIL Stoves – Monitoring Report Version 01 dated 27 Jan 2023 /2.2/ Distribution of ONIL Stoves – Monitoring Report 1.4 dated 27 Jan 2025 /2.3/ Sampling spreadsheet for the demonstration of survey results.
/03/	Sales and Distribution Database applicable for the monitoring period 01-November-2021 to 31-January-2023
/05/	Sample Household Survey Questionnaire survey period 31 March-2021 to 21-May-2021
/06/	WBT Records: 1. WBT Test report for the tests undertaken from 01 April-2021 to 22-May-2021 (biennial applicability) 2. Summary of WBT Results
/07/	- End User Sales records/ carbon waiver between the end users and the PP - Monitoring/Survey and installation reports.
/08/	Project Description for the Distribution of “Distribution of ONIL Stoves – Mexico, San Felipe Usila” 1

/09/	• Ex-ante ER sheets • Registered VCS PD • Validation Report • Validation Report of the project under VCS and CDM (the original GHG mechanism before transfer to VCS). • https://cdm.unfccc.int/ProgrammeOfActivities/cpa_db/3AKNYPF29XVHJ1WB6LQ45MGOTS8ECO/view • Verification Report of Previous Verifications Under VERRA • Fnrb spreadsheet (as part of registered documents) https://registry.VERRA.org/app/projectDetail/VCS/1216
/10/	• Stoves Technical Specifications and WBT Test Reports • Extended Life Time Certificate by the stove manufacturer • Operation & Maintenance Records • Internal Audit Report
/11/	• Training Records and Training Material for Monitoring Personnel • Extended lifetime certificate issued by the stove manufacturer • Declaration by the 'C-Quest Capital' for not claiming the GHG benefits in other mechanism dated 28 July 2021
/12/	Training Records of training imparted to the Households/stove users.
/13/	Email sent to suppliers for not claiming any Scope 3 emissions
/14/	• Methodology AMS II.G., version 12 "Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass" • Standard: Sampling and surveys for CDM project activities and programme of activities, Version 9 • Guideline: Sampling and surveys for CDM project activities and programme of activities, Version 043 • VCS Standard, Version 4.4 • VCS MR Template, Version 4.2 • VCS Program Guide version 4.3

APPENDIX 3: FINDINGS

Summary of findings	CL	CAR	FAR
	08	03	00

Table 1. Remaining FAR from validation and/or previous verifications (Applicable for verification)

N/A

FAR ID	**	Section no.	Date: DD/MM/YYYY
Description of FAR			
Project participant response		Date: : DD/MM/YYYY (please mention the date of your response to KBS)	
<i>Please mention the response in this box.</i>			
Documentation provided by project participant			
<i>Please mention the document provided to KBS along with the above response.</i>			
VVB assessment		Date: : DD/MM/YYYY	

Table 2. CL from this validation/verification

CL ID	CL 01.	Section no.	1.10 of the MR	Date: 04/03/2023
Description of CL				
Under section 1.10 of the VCS MR, it has mentioned that, as per Section 3.23.9 of the VCS Standard, v4.4, the “producer(s) or retailer(s) of the impacted good or service are known but not involved in the project or do not have a website”. The Project Proponent has informed the manufacturer of the ONIL stoves, that have been installed under this project, about the project will be registered under VERRA for the generation of VCUs. The evidence to verify the cited communication shall be submitted to the verification team.				
Project participant response		Date: 16/03/2023		
PP has added the relevant evidence in section 1.10 of the VCS MR.				
Documentation provided by project participant				
VCS MR v1.1				
VVB assessment			Date: 22/03/2023	
The revised VCS MR has been updated with respect to the clear information that, as per Section 3.23.9 of the VCS Standard, v4.4, the “producer(s) or retailer(s) of the impacted good or service are known but not involved in the project or do not have a website”. The appendix of updated MR has been updated, finding is closed.				

CL ID	CL 02.	Section no.	1.10 of VCS MR	Date: 04/03/2023
Description of CL				
- Section 1.9 of VCS MR states that “ONIL Stoves – Mexico – Usila 1” is registered as a Small-Scale Component Project Activity under the Clean Development Mechanism (CDM) and under the Programme of Activities “Distribution of ONIL Stoves – Mexico” (Ref. PoA 8521), kindly furnish a declaration that project is not claiming any GHG benefits under the CDM mechanism. - Under table 1 of the VCS MR (Section 1.10) it has been mentioned ‘Vocational training and project related training with respect to successful implementation of a programme, appropriate methods of conducting surveys, carrying out maintenance activities etc. in addition to issues related to climate change was provided to 5 individuals associated with the project’. The evidence of the training imparted shall be furnished to verification team to verify the number and the content of the training. - It has been stated in the table 1 for the SDG 8, that 5 persons were employed, the employment records are not submitted to verification team. - For the demonstration of SDG15, the value of $B_{y,saving}$ is mentioned as 7.91 tons, 7.91 tons of non-renewable biomass per stove during monitoring period leading to total savings of 244286 tons of biomass in 30689 households. The rationale of calculation shall be provided in the VCS MR.				

Project participant response	Date: 16/03/2023
a. A declaration from the PP has been provided to the verification team stating that the project is not claiming any GHG benefits under another carbon mechanism. b. Table no 1 in section 1.10 has been updated. PP would like to claim the achievement of 4 SDGs including SDG 4,7, 13, & 15. Evidence corresponding to the claimed SDGs have been provided to verification team. c. PP would like to clarify that SDG 8 is not being claimed for this project and hence the same has been removed from the revised MR. d. The same has been submitted to the verifying team.	
Documentation provided by project participant	
VCS v1.1 Relevant documents folder	
VWB assessment	Date: 22/03/2023
a. A declaration has been furnished by the PP that they are not claiming any GHG benefits other the VCS, the CDM webpage also verified to confirm the same. Finding is closed. b. PP has excluded the SDG#01 and evidence shared with rest of the claimed SDGs, the assessment has been provided in the main section of verification report corresponding to each SDG. Finding is closed now. c. SDG#08 has also been excluded, finding is closed as PP is not claiming the SDG#08. d. The rationale has been clarified during the con call between the verification team and PP, the same has been verified in the ER sheet now. Finding is closed.	

CL ID	CL 03.	Section no.	2.2 of MR	Date: 04/03/2023
Description of CL				
Under section 2.2 of the MR, it has been stated that, ‘No negative comment received during the ongoing communications with stakeholders during this monitoring period’. PP shall clarify how the stakeholder’s feedback were invited, the mechanism of ongoing feedback shall be clarified and provided in the VCS MR. Kindly refer the requirements of section 3.18.5 of the VCS Standard, Ver 4.4.				
Project participant response		Date: 16/03/2023		
A formal mechanism is in place which is used to record the feedback and challenges faced by the end-users on a regular basis. PP collects the feedback of end-users during every periodic verification. The end-users can also connect with PP in case they experience any issue or damage in the ONIL stove. PP tries to address the concerns raised by the PP at the earliest.				

Documentation provided by project participant	
Survey forms	
VWB assessment	Date: 22/03/2023
The justification provided by PP is accepted based on the review of the survey forms and the interviews undertaken onsite during the site visit. The detailed verification approach has been included in the main section of report. Finding is closed.	

CL ID	CL 04.	Section no.	4.2 of the VCS MR	Date: 04/03/2023
Description of CL				
a. It is not clear for monitored parameters through sampling viz, efficiency (ICS) and usage (operational status) and continuous use of baseline how the stove vintages were considered into account for the representative sampling. PP shall clarify and report the same in the applicable section of VCS MR. b. The survey history for the WBT and usage survey and continuous use of baseline history shall be part of VCS MR, to verify the annual/biennial as applicable for each parameter is complied with the requirement of applied methodology.				
Project participant response		Date: 16/03/2023		
a. The sampling sheet providing details of the process adopted for sampling has been provided to the verifying team. b. The survey history details have been added in the revised MR.				
Documentation provided by project participant				
a. Sampling sheet b. Revised MR				
VWB assessment			Date: 22/03/2023	
a. The spreadsheet and the updated MR show the consideration of the efficiency for each vintage of ICSs. Based on the submitted documents pertaining to WBT, finding is closed now. b. Section 4.3 of the revised MR includes the details of surveys/WBTs for the WBT and therefore it has been established that the surveys were undertaken as per the chosen frequency in methodology. Finding is closed.				

CL ID	CL 05.	Section no.	4.2 of the VCS MR	Date: 02/03/2023
Description of CL				
It has been observed by the verification team that 2010 vintages to 2016 vintages of ICS are claiming the ERs for the monitoring period. PP shall provide the lifetime certificates of the ICS, also furnish the O&M records of old vintages to VVB. PP shall clarify how the outage during the O&M was considered into the $B_{y,saving}$ calculations.				
Project participant response		Date: 16/03/2023		
PP would like to clarify that the ONIL stoves are consistently maintained and in case any end-user experiences any issue with the functioning of the project stove PP tries to address the concerns at the earliest. Samples of maintenance being conducted by the PP has been provided along with the corresponding invoices.				
Documentation provided by project participant				
Please mention the document provided to KBS along with the above response				
Extended life certificate				
VVB assessment			Date: 22/03/2023	
Evidence of extended lifetime is submitted, VVB observed that the structure was verified working for the older vintages during the onsite assessment. Therefore, finding is closed based on the extended life certificate and onsite inspection.				

CL ID	CL 06.	Section no.	4.2 of the VCS MR	Date: 02/03/2023
Description of CL				
Following documents shall be furnished to VVB: a. All scanned survey forms used for the monitoring b. WBT reports/raw data sheet c. Sampling sheet demonstrating the sample size calculation, chosed confidence precession, expected proportion along with the results of actual results. d. Carbon beneficiary forms (2 samples for each vintage).				
Project participant response		Date: 16/03/2023		
All the relevant documents required for verification has been provided to the verifying team.				
Documentation provided by project participant				
Relevant document folder				

VVB assessment	Date: 22/03/2023
All documents sought in a-d are being furnished to VVB, the documents were used as part of desk review. Finding is closed now.	

CL ID	CL 07.	Section no.	VERRA RReview	Date: 06/07/2023
Description of CL				
As per the applied methodology, technologies aged beyond their useful lifetime shall be either a) replaced or b) retrofitted, complying with all conditions described in paragraph 40 of the methodology.				
Action Required by PP				
1. The PP must explain all steps taken to ensure that project stoves credited beyond the project lifetime comply with all the methodology requirements. 2. The PP must ensure a detailed description is included as part of MR. PP shall also clarify what was the sample size of stoves vintage more than 10 years in the usage survey. PP shall furnish the records of periodic maintenance to VVB.				
Project participant response		Date: 06/03/2023		
The life of ONIL stove as estimated by its manufacturer is beyond 10 years which can be extended to up to 20 years with regular maintenance and replacement of metal parts which are unlikely to break (within 10 years) owing to rust and exposure to high temperatures. Apart from the metal parts, the basic structure of the stove is made of bricks and concrete which gives it a prolonged life if regular maintenance work is carried out. The project proponent has a written confirmation^[1] from the manufacturer on the extended life of stoves beyond the 10-year quoted period. Same was substantiated during the RCP of this project after the completion of 1st crediting period of 10 years. For ensuring the longevity of the project stoves, PP has devised a proper Preventive Maintenance and Grievance Redressal approach in the project area. PP also adopted ‘need-based repair’ and ‘random spot checks’ approaches to maintain the stoves that have been distributed under this project. The rationale for adopting this approach is that all the beneficiaries were thoroughly trained regarding the usage and maintenance of the stoves. They are properly trained with all the specific details to maintain the stoves which surely ensures proper and high usage of the stoves in the project region. A copy of the standard operating procedure (SOP) adopted at the project locality has been shared with the VVB. The SOP clearly indicates the availability of a two-way channel for all the beneficiaries to get their stoves repaired and report any of their grievances and challenges associated with the stove usage. Information about the availability of a proper communication channel and the details of the contact information is extensively provided to the end-users and posters with all the relevant information is displayed at the major gathering points like schools, municipality offices, central points of villages etc. within the project area to ensure proper dissemination of information. Photographs of the posters pasted at different localities have been also provided to the VVB.				

The implementing partner (IP) of this project visits the beneficiaries and undertakes the repair work which is formally recorded in a form that captures the details of materials used in repairing the stoves and an undertaking by the end-user to continue usage of the stoves based on the instructions provided by the IP staff. A copy of the maintenance record is provided to the VVB as evidence.

Further, PP would like to clarify that in the IP who undertakes the repair and maintenance of the project stoves is well-equipped and properly trained to carry out the maintenance work of the stoves. The IP has also started manufacturing the ONIL stoves and is thoroughly aware about the technical specifications of the stoves ensuring that they are competent to undertake the maintenance activities in the project area. The same has also been presented in their website (<http://fuegolimpio.com/nosotros/>).

A detailed description of this approach and overall process adopted in the project site is provided in the revised MR.

Documentation provided by project participant

1. Stove Longevity certificate by manufacturer
2. Preventive Maintenance and Grievance redressal SOP (English and Local language)
3. Copy of Stove maintenance form
4. Photographs providing evidence of posters detailing contact details at major gathering points.

VVB assessment

Date: 06/03/2023

Para 40 of the CDM methodology AMS IIG, version 12 lays down:

If project devices are retrofitted/repared before or at the end of the device's estimated life span, emission reductions may be claimed for these devices during the extended lifetime only if the details of the retrofits/repairs undertaken (e.g. parts replaced, specifications followed, personnel conducting the repairs and date of retrofitting) on each device are documented and in addition, one of the following options is implemented: (

a) Extended lifetime is demonstrated through a warranty from the original manufacturer, or a guarantee from a company with demonstrated experience in cookstove repair that assures the performance of the stove in its entirety comparable to the original device including with regard to efficiency, safety and indoor emissions; or

(b) Extended lifetime or the durability of the retrofitted device is demonstrated through a durability test performed according to requirements in ISO 19867-1 for durability or a comparable national standard. Certification by a relevant national standards body or an appropriate certifying agent recognized by that body (with reference to Data/Parameter Table 20 of the methodology) may be supplied based on sample tests specified by the standard applied.

The PP is complying with the option (a) of the cited para of applied methodology. The extended lifetime certificate by the original manufacturer was furnished to the verification team which categorically states that the projects stoves can run up to 20 years with periodic operation and maintenance, VVB would like to quote the exact text as below:

The average life of the ONIL stoves manufactured by Fuego Limpio is no less than 10 years and can reach up to 20 years with periodic maintenance and replacement of metal parts after their useful life standard.

It was verified during the onsite audit wherein the VVB's team visited the site and selected the old vintage stoves too, and concluded that the stoves were in the working condition. The survey undertaken by the PP as part of the usage survey also had the reasonable sample size stoves which has the more than 10 years lifetime.

Further the verification team found that the implementing partner (The firm which is also one of the stove manufacturers) of this project visits the beneficiaries and undertakes the repair work which is formally recorded in a form that captures the details of materials used in repairing the stoves and an undertaking by the end-user to continue usage of the stoves based on the instructions provided by the IP staff. The maintenance record is provided to the VVB as evidence. The website of the organization responsible for repair work verified (<http://fuegolimpio.com/nosotros/>), and concluded that it is a competent entity.

Therefore, based on the physical inspections of stoves and it's built quality which is made of concrete and Reinforcing steel: high strength, grade 70, minimum yield strength (Fy) of 5000 Kg/cm², its process manufacturing complies with the German standard DIN 488 and the American standards ASTM 496 and 497, verified from longevity certificate provided by the manufacturer, and onsite inspection. VVB confirms that the project complies with the requirements of para 40, option (a) of the CDM methodology AMS IIG, version 12.

CL is closed.

CL ID	CL 08.	Section no.	VERRA Review_Section 6	Date: 21/08/2024
Description of CL				
1.	The proportion of operational cookstoves within the monitoring period(s) is reported to be 98.96% (MP9). This is likely unrealistic, given the minimal probability of attaining 98.96% stove operation without breakages and abandonment over their lifetime. The project documentation does not transparently provide the measures put in place for on-time stove maintenance support for repairs and replacement.			
2.	The MR does not provide a sufficiently detailed reporting of how the proportion of operational cookstoves was established by considering the stove age, operational maintenance, stove geography inter alia into consideration.			

3. The monitoring report does not provide sufficient information on how the samples for determining stoves in operation were selected and the sampling process used. 4. The project includes stoves that have exceeded its designated lifetime (i.e., 10 years). However, the monitoring report does not include details of retrofits and repairs done on each device. Only a manufacturer warranty is provided.	
Project participant response	Date: 27/01/2025
1. The proportional of operational stoves with in the reported MP09 is 98.96%. However, as per the secondary data of other projects, stoves in operation percentage was 91.30%. However, there was no stove champion data for comparison and no primary data available, PP has assumed 0% as stove operational rate in 2023. The operational stove percentage was used to calculate annual deration (loss rate). The annual deration was then applied to calculate year wise stove operational rates. PP has compared among: a) initial MP survey operational rate (98.96%). b) Secondary data (91.3%) and c) Verra 6.1 stove operational rate -Deration rate The ER are estimated based on year wise operational rate considering conservative approach. Also Sec 2 of the MR updated with the details put in place for on-time stove maintenance support for repairs and replacement. 2. The operational stoves survey determines the proportion of each age cohort of technologies being credited under the project , as outlined in the response 1 above PP has considered the lowest value of stoves in operation on a conservative basis for all the vintage/age groups. 3. Sample determination: To monitor the proportion of stoves which are still operating, PP has applied 90% confidence and 10% precision for determination of samples. Approach-Sampling based survey (questionnaire survey/interviews) : Visual inspection of the premises to see if ONIL stove is operational and in use. Interview with end user if required to verify that ONIL stove is still in use for identifying the operational stoves (sec 4.3 of MR provided with the information) Hence the sampling plan implemented by the PP is in accordance with the applied approved monitoring methodology as per VCS PD 4. WBT for the parameter $\eta_{new,i}$, were conducted from 01 April-2021 to 22-May-2021. The previous WBT for the parameter $\eta_{new,i}$, for eight Vintages (i.e. vintages 2010, 2011, 2013, 2014, 2015, 2016, 2017 & 2018) were conducted from 15-February-2020 to 22-February-2020. Each vintage representation for the WBT test were verified by the VVB during the verification as per the WBT results. As of PP has conducted the efficiency test of the stoves of different vintages in Year 2020 for stove vintage of 2010, 2011, 2012, 2013 evidence that the stoves are in operation. However, there was no stove champion data for comparison and no primary data available, PP has assumed 0% as stove operational rate in 2023. The operational stove percentage was used to calculate	

annual deration (loss rate). The annual deration was then applied to calculate year wise stove operational rates as provided at point 1 above under PP response.

Documentation provided by project participant

1. Revised MR
2. Revised Emission reduction Calculation excel spread sheet
3. 44.03.05 Stoves in Operation - Verified Secondary Data (2024-08-05).xlsx
4. Excel spread sheet for calculation of Operational stove percentage as per annual deration rate applied provided to VVB

VVB assessment

Date: 20/02/2025

1. PP has now compared the survey results with the other similar projects and found that the operational rate is 91.30%, the results of the other projects were submitted to VVB's verification. PP clarified that, there was no stove champion data for comparison and no primary data available, PP has assumed 0% as stove operational rate in 2023, which has been assessed most conservative by the verification team. The operational stove percentage was used to calculate annual deration (loss rate). The annual deration was then applied to calculate year wise stove operational rates on different age groups. The calculation is demonstrated in the ER sheet. The approach assessed most conservative by the VVB. Finding is closed now.
2. The operational stove rates have been now discounted based on the annual deration applied to each of the stove age as assessed in the previous finding, the approach has been demonstrated in ER sheet. Finding is closed now.
3. The response is not sufficiently clear, the original MR submitted and verified had the 95/10 confidence/precision. The finding is open.
4. The response is out of context, the question was on the repair and maintenance not on WBT. Finding is open.

Project participant response

Date: 02/03/2025

3. The response's 90/10 confidence/précisions was a typo; the original MR met the 95/10 confidence/precision specified in the spreadsheet that was submitted to VVB for verification during Rfl.

However, there was no stove champion data for comparison and no primary data available, PP has assumed 0% as stove operational rate in 2023. The operational stove percentage was used to calculate annual deration (loss rate). The annual deration was then applied to calculate year wise stove operational rates.

Deration rate used for the stove Operational percentage and excel spread sheet of the deration loss rate has been provided to VVB.

Included the approach in Sec 4.3 of updated MR submitted to VVB.

4. Sample copy of maintenance records provide to VVB in support for the activities related to stove repairs like insulting material, metal shelves, other repair undertaken.

Documentation provided by project participant

WB assessment	Date: 05/03/2025
3. PP clarified that the 90/10 confidence/precession mentioned was an error and actual sampling was done at 95/10, which was also verified by the VVB during the verification. Since the conservative estimations have been applied now and the operational rate has been calculated in the most conservative manner as following: For Year 2021: 14.29% For Year 2022: 7.14% For Year 2023: 0% Finding is closed now. 4. Sample copy of maintenance records provide to VVB in support for the activities related to stove repairs like insulting material, metal shelves, other repair undertaken. The VVB verified the same in the verification process by reviewing the O&M records. Now the operational rate has been already discounted therefore the least operational rate as stated in the previous finding assessed reasonable and most conservative. Finding is closed now based on the revised operational rates used in the project.	

Table 3. CAR from this validation/verification

CAR ID	CAR 01	Section no.	4.3 of the VCS MR	Date: 04/03/2023
Description of CAR				
The sampling presented in the VCS MR is not clear with respect to the sample size calculation, how the expected proportion/mean, standard deviation etc. was used to arrive at the sample size for the chosen proportion parameters. Moreover, the actual sampling results are not linked with reproducible calculations. Neither ER sheet nor any other excel sheet is submitted to VVB to verify the appropriateness of sampling as per the CDM sampling guidelines.				
Project participant response		Date: 16/03/2023		
The sampling sheet explaining all the steps involved and parameters considered for sampling has been provided to the verifying team. The sampling sheet explains all the parameters and represents the various formulae applied for these estimations. A reproducible excel sheet has been provided to the verifying team for reference.				
Documentation provided by project participant				
Sampling sheet included				

VVB assessment	Date: 22/03/2023
Based on the review of the submitted sampling sheet, the finding is closed now.	

CAR ID	CAR 02	Section no.	4.3 of the VCS MR	Date: 04/03/2023
Description of CAR				
PP shall link the survey results in the ER sheet with the actual survey. Following observations were documented by the verification team during desk review:				
a. Value of μ_y is not included in the ER sheet, PP shall report how the parameter is monitored during the verification. b. The description for μ_y is written as ‘Stoves in operation (μ_y)’, the description is not in accordance with the methodology. μ_y refers to continue use of baseline stoves in accordance with the methodology AMSIIG, version 12. c. $\eta_{new,i}$ monitored through sampling, this is a mean parameter therefore the sample size formula and sampling frame shall be clarified with respect to the requirements of formula for mean parameters. d. Training records of the surveyors shall be furnished to VVB as it has been mentioned that surveyors were trained.				
Project participant response		Date: 16/03/2023		
The value of μ_y has been added by PP in the ER sheet. During the verification the value of μ_y is monitored by the survey conducted during the monitoring period.				
Documentation provided by project participant				
a. ER sheet. b. Sampling sheet. c. Sampling sheet explaining all the parameters and sampling frame has been provided to the verifying team. A reproducible excel sheet used for sampling for this project has been provided to the VVB. d. All the required evidence has been provided to the VVB				
VVB assessment				Date: 22/03/2023
a. The updated ER sheet has addressed the issue raised by the verification team, finding is closed now. b. WBT sheet is now furnished to VVB, the results are now traceable from the WBT reports. Finding is closed. c. Sampling sheet explaining all the parameters and sampling frame has been provided and the results are verified that in compliance with the CDM sampling standard. d. Training records of surveyors are being furnished to VVB, based on the review of records it was concluded adequate trainings were imparted to them.				
Findings a-d are closed now.				

CAR ID	CAR 03	Section no.	4.3 of the VCS MR	Date: 04/03/2023
Description of CAR				
Ex-ante values of ERs for the comparable monitoring period is provided in the section 5.4 of the VCS MR, however the calculation methodology to demonstrate on the figure is neither part of MR nor the submitted ER spreadsheet.				
Project participant response		Date: 16/03/2023		
PP has added the Ex-ante comparison tab and has shown the ex-ante values of ERs and comparison between ex-ante ERs and achieved ERs during the current MP for better clarity for the verification team.				
Documentation provided by project participant				
ER spreadsheet				
VVB assessment				Date: 22/03/2023
Revised ER sheet demonstrates the algorithm of the calculation of ex-ante ERs, the calculation seems reasonably adequate. Finding is closed now.				

Table 4. FAR from this verification

FAR ID	FAR 01	Section no.	<i>Insert reference to protocol</i>	Date: DD/MM/YYYY
Description of FAR				
<i>Insert the issue raised</i>				
Project participant response				Date: DD/MM/YYYY
NA.				
The documentation provided by project participant				
NA.				

WB assessment	Date: DD/MM/YYYY
NA.	

APPENDIX 4: COMPETENCE OF TEAM MEMBERS

Personnel Name				Sanjay Kandari	
Schemes	☒ CDM	☒ GCC	☒ GS	☒ VCS	☐ Other GHG Schemes (mention here)
Qualified to work as					
Team Leader			☒	Technical Expert	☒
Validator/Verifier			☒	Financial Expert	☒
Technical Reviewer			☒	Local Expert	☒
Area(s) of Technical Expertise					
Sectoral Scope			Technical Area		
SS 1: Energy industries (renewable/non-renewable sources)			TA 1.1: Thermal energy generation		
			TA 1.2: Renewable Energy Generation		
SS 2: Energy distribution			TA 2.1. Energy distribution		
SS 3: Energy demand			TA 3.1. Energy Demand		
SS 13: Waste Handling and Disposal			TA 13.1 Waste Handling and Disposal		
			TA 13.2 Manure Management		
Approved by (Manager Competence & Training)			Manager C & T		

Approval date				05-12-2020	
Personnel Name		Sanjay Kandari			
Schemes	☒ CDM	☒ GCC	☒ GS	☒ VCS	☐ Other GHG Schemes (mention here)
Qualified to work as					
Team Leader			☒	Technical Expert	☒
Validator/Verifier			☒	Financial Expert	☒
Technical Reviewer			☒	Local Expert	☒
Area(s) of Technical Expertise					
Sectoral Scope			Technical Area		
SS 1: Energy industries (renewable/non-renewable sources)			TA 1.1: Thermal energy generation		
			TA 1.2: Renewable Energy Generation		
SS 2: Energy distribution			TA 2.1. Energy distribution		
SS 3: Energy demand			TA 3.1. Energy Demand		
SS 13: Waste Handling and Disposal			TA 13.1 Waste Handling and Disposal		
			TA 13.2 Manure Management		
Approved by (Manager Competence & Training)			Manager C & T		
Approval date			05-12-2020		

Personnel Name:		Mr. David González Jiménez	
Qualified to work as:			
Team Leader	☐	Technical Expert	☐
Validator/Verifier	☐	Financial Expert	☐
Technical Reviewer	☐	Local Expert (Mexico)	☒

Area(s) of Technical Expertise	
Sectoral Scope	Technical Area
-	-
Approved by (Manager Competence)	Dr. Indu Dwivedi
Approval date:	15/02/2023

Personnel Name:		S.Ranganathan	
Qualified to work as:			
Team Leader	☒	Technical Expert	☒
Validator/Verifier	☒	Financial Expert	☐
Technical Reviewer	☒	Local Expert (India)	☒
Area(s) of Technical Expertise			
Sectoral Scope	Technical Area		
SS 01: Energy industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
	TA 1.2: Energy generation from renewable energy sources		
SS 2: Energy distribution	TA 2.1. Energy distribution		
SS 3: Energy demand	TA 3.1. Energy Demand		
SS 5: Chemical industry	TA 5.1 Chemical industry		
SS 12: Solvents use	TA 12.1 Chemical industry		
SS 13: Waste handling and disposal	TA 13.1 Waste Handling and Disposal		
	TA 13.2 Manure		
Approved by (Manager C& T)	Shikha Sharma		
Approval date:	05/05/2022		

Personnel Name		Mr. Ashish Yadav			
Schemes	☒ CDM	☒ GCC	☒ GS	☒ VCS	☒ Other GHG Schemes (Cercarbono, SDvista, VCS CCB)
Qualified to work as					
Team Leader			☒	Technical Expert	☒
Validator/Verifier			☒	Financial Expert	☐
Technical Reviewer			☒	Local Expert (India)	☒
Area(s) of Technical Expertise					
Sectoral Scope			Technical Area		
SS: 1 Energy Industries (Renewable/non- renewable)			TA 1.2. Renewables		
SS: 3 Energy demand			TA 3.1 Energy demand		
SS 13: Waste handling and disposal			TA 13.1. Solid waste and wastewater		
Approved by (Manager C&T)			Mr. Dushyant Parashar		
Approval date			28-10-2024		

APPENDIX 5: CALIBRATION DETAILS OF INSTRUMENTS USED FOR WBT

WBT for the parameter $\eta_{\text{new},i}$, undertaken by the Equipment

Instrument	Model	Other details
Weighing Scale	American Weighing Scale – AWM-13	Range: up to 5 kg ($\pm 2\text{g}$) Calibration facility: within the instrument with known weights Calibration frequency: once in three years Date of purchase: 30-September -2022 Validity of calibration till: 29-September-2025
Digital Thermometer	Make: Fluke Model: 51II	Range: $-50\text{ }^{\circ}\text{C}$ to $+300\text{ }^{\circ}\text{C}$ ($\pm 1\text{ }^{\circ}\text{C}$) Calibration frequency: once in three years Date of Calibration: 06-October-2022 Validity of calibration till: 06-October-2023
Digital Moisture meter	PROCONSA Moisture meter	Range: 2% to 70% ($\pm 0.5\%$) Calibration frequency: once in three years Date of purchase: 29-September-2022 Validity of calibration till: 28-September-2025