ONIL STOVES —GUATEMALA – USPANTÁN

Document Prepared By

(By KBS Certification Services Limited)

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Summary:

'C-Quest Capital Malaysia Limited' has appointed the verification body KBS Certification Services Limited to perform a verification of VCS Project Activity "ONIL STOVES —GUATEMALA – USPANTÁN" in Guatemala (hereafter "project activity") for the period from 01-October-2021 to 30-September-2022 (both days included).

The project proponents (multiple) 'HELPS International Incorporated' and 'C-Quest Capital LLC' applied the VCS approved Methodology: VMR0006: Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.1. 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 02 CARs, 08 CLs and 00 FAR were raised, all the CARs and CLs are closed now and the FAR shall be checked at the time of the next periodic verification. The list of Clarification and Corrective Actions Requests (CL and CAR) is presented in this report.

KBS Certification Services Limited 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 Limited has performed the verification of 'ONIL STOVES —GUATEMALA – USPANTÁN' 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 Limited in opinion that the project correctly applies the baseline and monitoring methodology VMR0006: "Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.1" and meets the relevant VCS requirements for the Methodology, Voluntary Carbon Standard requirements and the relevant host country criteria.
Therefore, KBS Certification Services Limited can certify that the emissions reductions from the "ONIL STOVES —GUATEMALA – CPA 001" project during the period 01-October-2021 to 30-September-2022 amount to 90,392 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 02 CARs, 08 CLs and 00 FAR have been 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 VMR006, version 1.1

1 INTRODUCTION

1.1 Objective

KBS Certification Services Limited has been contracted by, ‘‘C-Quest Capital Malaysia Limited’ to undertake verification and certification for the greenhouse gas (GHG) emission reductions reported from ‘ONIL STOVES —GUATEMALA – USPANTÁN’ (VCS ID 1721) for the monitoring period 01-October-2021 to 30-September-2022. (Inclusive of both days), under the crediting period 20-December-2020 to 19-December-2030, in the initial monitoring report version 01 dated 31 January 2023, with regard to the relevant requirements of VCS Standard Version 4.4. 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. 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. 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, VMR0006: Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.1
- VCS Monitoring Report
- Monitoring Plan
- Background investigation and follow up interviews
- Stakeholder feedback

- Project's compliance with other relevant rules, including the project country (Guatemala) 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 (20 Feb 2023 & 21 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

The project involves the distribution and installation of ONIL Stoves for use by households in Guatemala. Before the adoption of the ONIL Stove, households in Guatemala used inefficient, conventional 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 will save 3.837 tons of CO_2e per year.

The project was included as the first CPA under CDM PoA entitled "ONIL Stoves —Guatemala – Uspantán" (CDM PoA reference number - 8480, CPA reference number – 8480-0001).[1]

The first ONIL Stove was installed on 11-January-2010. Till the end of monitoring period, a total of 11,132 ONIL Stoves was reported installed under the project.

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 relevant implementation dates (e.g, dates of construction, commissioning, and continued operation periods).

CDM CPA inclusion

[1] https://cdm.unfccc.int/UserManagement/FileStorage/6M3UGFJRC8TBWP4DKQA2Y9ZXS0IH1L

Event/Action	Date	Means of Verification
Date of CPA inclusion into PoA	19-December-2012	Verified from the UNFCCC PoA Database

Installation of ICS

Event/Action	Date	Means of Verification
Date of first ICS installed	11-January-2010	Database and beneficiary agreement.
Date of last ICS installed in the database	11-August-2012	Database and beneficiary agreement.

Survey prior to monitoring period

Event/Action	Date	Means of Verification
Survey dates for parameters n_y and SS_y	01-February-2017 to 28-March-2017	Verified from the beneficiary agreement also from the start date validated in the CPA validation report. Report is publicly available on UNFCCC website.
Survey dates for parameter $\eta_{new,y,i}$	28-February-2017 to 16-March-2017	Verified from the beneficiary agreement also from the database furnished.

Event/Action	Date	Means of Verification
Survey dates for parameters n_y and SS_y	08-June-2018 to 11-June-2018	Verified from the previous monitoring documents
Survey dates for parameter $\eta_{new,y,i}$	15-June-2018 to 28-June-2018	Verified from the previous monitoring documents

Event/Action	Date	Means of Verification
Survey dates for parameters n_y and μ_y	01-October-2020 to 31-October-2020	Verified from the survey records made available to verification team along with the acceptance sampling used for the onsite assessment.
Survey dates for parameter $\eta_{new,y,i}$	29-September-2020 to 03-November-2020	Verified from the survey records made available to verification team along with the acceptance sampling used for the onsite assessment.

Survey data used in the current MP:

Survey dates for parameters $N_{y,i,j}$ and μ_y	01-October-2020 to 31-October-2020
Testing dates for parameter $\eta_{new,y,i}$	03-November-2022 to 11-November-2022

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 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" 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 PP'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 DOE's acceptance sample size, 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 09.0/14/. From the above assumed factors, the verification team determined the minimum sample size (n) as 11 minimum samples for the project and acceptance number (c) as Zero as per the chosed AQL/UQL, Consumer/Producer risk. 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 these CPAs to cross check the data reported by PP. Verification team has checked the PP 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	DOE Sample size (n)	No of PP'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 PP 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/PP.

Duration of Verification:

Verification Contract	23 -September-2022
Onsite audit	20-February-2023 & 21-February-2023
Draft Verification Report	20- March-2023
Final Verification Report	18-July- 2023

2.2 Document Review

A desk review is undertaken for the registered VCS PD, VCS MR, emission reduction calculation spread sheet, 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:

Dates:	20-Feb-2023 & 21-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 con/precession calculations procedure. VII. Double Counting	Mr. Tridip Goswami	Managing Director, South Asia, C-Quest Capital (Entity responsible for preparing MR/ER sheet and other GHG requirements).
	Ms. Tanya Sharma	Manager, C-Quest Capital
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	Marcela Chonay Santos Tambriz Manuela Tambriz Antonia López Tziquin Manuela Tambriz Nicolasa Sicajan Martin Emilia Catarina Yac Ajanel Catarina Tzaj Antonia Alvarez Wiachiac Carmela Chiroy Paulina Raxton	End Users

	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)		

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" 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 PP'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

"ONIL Stoves —Guatemala – Uspantán" 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 – Guatemala" (Ref. PoA 8480).[2]

The project is not claiming any CERs for the same vintages and this has been verified from the CDM PoA webpage.

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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

[2] CDM document can be accessed through:
https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/NQIZR3S1J58FLTHUKMB2X6PY07CE49/view (PoA) and
https://cdm.unfccc.int/ProgrammeOfActivities/cpa_db/Q158GU3XA9MFE0H2Z6OI4JTNDL7WRP/view (CPA 001)

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 next section of the MR.

Applied Methodology: Applied methodology in the registered project activity is VCS methodology VMR0006 "Methodology for Installation of High Efficiency Firewood Cookstoves" Version 1.1 is now approved under VERRA for this type of projects. PP has switched from the registered methodology AMS II.G to VCS methodology VMR0006. There is no negative impact on conservativeness of quantification of GHG emission reduction as a result of deviation.

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

The project activity is in operation stage as confirmed during onsite interviews of the end users and the monitoring team. All the physical components and project boundary are in conformity with the description in registered VCS PD.

The first ONIL Stove was installed on 11-January-2010. Till the end of monitoring period, a total of 11,132 ONIL Stoves has been installed under the project.

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.

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 and other programs:

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, which is acceptable.

- The ex-ante estimation for the ERs generated by a single ONIL stove is 9.01 tCO_2/year which has been updated in the revised MR.

The ex-ante estimations have been also presented in section 5.4 of the revised MR and an excel sheet/07/ presenting these estimations have been provided to the VVB as evidence, the calculation assessed as correct by the verification team. The ex-ante ER sheet, has the assumptions for the ER estimations viz Number of ICS working each year, f_{nrb}, adjustment factor for continual use of baseline, baseline fuel consumption, project efficiency etc.

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.

Lifetime of the ICS under the Project:

Section 9.3 of the methodology VMR0006, version 1.0 lays down:

"Technologies aged beyond their useful lifetime, as established in the usage survey, are removed from the project and no longer credited."

VVB would also like to quote the para 40 of CDM methodology AMS IIG, version 12:

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

If project devices are retrofitted/repaired 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) 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 lifetime certificate by the original manufacturer was furnished to the verification team which categorically states that the projects stoves can run more than 15 years, VVB would like to quote the exact text as below:

"Due to the simple design, good construction, and materials the ONIL Stoves has many years in the market with high durability rates having stoves with more than 15 years working without any issue".

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 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 (https://www.helpsintl.org/community-development/), and concluded that it is a competent entity and one of the stove manufacturers 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.

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.	Contribute to increasing vocational and relevant skills of at least 5 local individuals (with a focus on targeting women and youth) by providing non-formal education and training on issues related to climate change, with specific skill building in operations and surveying activities related to stove distribution and its monitoring under VCS	Training records furnished to verification team, based on the review of training records, it was confirmed that the HHs were trained by the PP.
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 11,132 households.	Increase access to clean cooking technology with project stoves installations in approximately 11,132 households under the project lifecycle	This is directly related to the GHG calculations, the database beneficiary agreements inter alia verified as part of project implementation.
3	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 90,392 tCO_2 eq.	Total GHG avoidance over project lifetime is expected to be 1,002,870 t CO_2 eq.	The calculation is verified in the subsequent sections of verification report.

4	15.3	15.2.1 Progress towards sustainable forest management by increasing above ground biomass in forests	Decrease	The project has resulted in saving 4.037 tons of non-renewable biomass per stove per annum.	Contribute an estimated reduction of deforestation of 5.0569 tons of woody biomass, per stove, per year, from forests surrounding the communities and reducing pressure on forest reserves.	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-October-2021 to 30-September-2022 (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.

Project is not claiming any carbon credits in other mechanism and declaration to this affect/07/ was furnished to the VVB. The verification team also visited the CDM website[3] wherein the CPA was registered and found that no monitoring report uploaded therein for the same monitoring period.

Implementation status of the monitoring plan:

During the verification, all relevant monitoring parameters of the registered monitoring plan have been verified with regard 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.

[3] https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/NQIZR3S1J58FLTHUKMB2X6PY07CE49/view

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.

The projects/CPAs are originally registered as part of CDM PoA and then transferred to VERRA. The CPAs are still active on the CDM website. Thus, simple random sampling at PoA level as per EB 69 Annex 5 Section E of the AMS II.G. methodology has been adopted by including all the stoves distributed under both the projects. Further, PP would like to clarify that monitoring plan approved under CDM CPA-DD is being adopted for these projects. No deviation is undertaken while transitioning under VCS or during RCP, thus, allowing the PP to adopt PoA level sampling approach in this project. Also, considering that PP has the choice of undertaking the issuance under CDM or VCS for a particular monitoring period, PP would like to indicate that for the current MP, the ERs are being claimed under VCS and not CDM as explained by the PP.

Verification team found that the even the sampling was undertaken at the project level, the adequate samples were considered by the PP from each CPA/VCS projects. The project wise sample size is below for each of the monitored parameter for the proportion parameters on the expected usage rate and continuous use of baseline stoves correction factor as 80%:

Parameter	Sample size 1720	Sample size 1721
Usage rate (ny,j)	68	68
Adjustment factor (μy)	68	68

The actual sample size considered by the PP for both the projects is 253 and which includes the representation fro both the VCS projects/CDM CPAs. Therefore, the verification team concludes that the representative samples were undertaken by the PP to cover both the projects in across PoA sampling.

The following numbers were sampled by the PP for each of the project:

- CPA01 (1721) = 102
- CPA02 (1720) = 151

If the sampling would have been done the at the project level the numbers would beve been 68 for each project as explained in the previous response. Therefore, verification team concludes that the PoA level sampling is conservatively undertaken by PP to capture the requirement that it also fulfils the project level sampling.

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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. 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.

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 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 compliance with the monitoring plan contained in the registered VCS-PD and the applied methodology VMR0006 “Methodology for Installation of High Efficiency Firewood Cookstoves” Version 1.1, 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 woody biomass saved by the project activity during year *y* that can be established as non-renewable biomass	0.7982	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	8.05 tons/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 the system being replaced (Traditional Cooking Stoves)	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	Leakage (LE_Y) (Fraction)	Leakage adjustment factor	0.95	Default value in methodology. The values were fixed at the time of validation of VCS group project. Hence accepted by the verification team.

7	$EF_{wf,CO2}$	CO2 emission factor for the use of wood fuel in baseline scenario	112 tCO_2/TJ	Default value in methodology. The values were fixed at the time of validation of validation. Hence accepted by the verification team.
8	$EF_{wf,non\ CO2}$	Non-CO2 emission factor for the use of wood fuel in baseline scenario	26.23 tCO2/TJ	Default value in methodology. The values were fixed at the time of validation of validation. Hence accepted by the verification team.

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
$N_{y,i,j}$	Number of project devices of type i and batch j operating during year y	97.63%	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 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. 97.63% 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.
$B_{old\ adjusted}$	If baseline stoves continue to be used, adjustment ensures that fuel wood consumption of those stoves is excluded from B_{old}.	$B_{old\_adjusted}$ $= B_{old} \times (1 - \mu_y)$ $= 8.05 \times (1 - 0.0237)$ $=7.8592$ Tonnes	If baseline stoves continue to be used, adjustment ensures that fuel wood consumption of those stoves is excluded from B_{old}.	According to VMR0006 version 1.1, 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

<table>
<tr>
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<td>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 $\mathbf{B_{old\ adjusted}}$ was found adequate by the verification team and discount was applied appropriately in the ER calculations.</td>
</tr>
<tr>
<td>$\eta_{new,i,j}$</td>
<td>Efficiency of the project device of each model/vintage</td>
<td>
<table>
<tr><th>Vintage</th><th>Efficiency</th></tr>
<tr><td>4</td><td>0.2805</td></tr>
<tr><td>5</td><td>0.2794</td></tr>
<tr><td>6</td><td>0.2777</td></tr>
<tr><td>7</td><td>0.2789</td></tr>
<tr><td>8</td><td>0.2830</td></tr>
<tr><td>9</td><td>0.2817</td></tr>
<tr><td>10</td><td>0.2865</td></tr>
<tr><td>11</td><td>0.2849</td></tr>
<tr><td>12</td><td>0.2780</td></tr>
<tr><td>13</td><td>0.2728</td></tr>
</table>
</td>
<td>Project Stoves are tested using WBTs for thermal efficiency (Interview to check if tests were conducted).</td>
<td>The parameter “Efficiency of the project design I and batch j implemented as part of the project activity” (ηnew) is a monitoring parameter as per the registered VCS PD. As per the VCS PD, the source of data for the above parameter is “representative sampling testing based on Water Boiling Tests”</td>
</tr>
</table>

				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 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. WBTs were conducted in November 2022 (03-November-2022 to 08-November-2022) which can be applied till November 2021 retroactively as per the CDM guidance of sampling and while doing this the verification team observed that monitoring period of 1 OCT 2021 to 07th Nov 2021 is not covering in annual frequency. PP explained that they considered this value based on survey conducted in November 2022 for the entire monitoring period. They could not undertake the WNT exercise in 2021 due to COVID restrictions and therefore the 95/10 confidence precession is applied in 2022 WBTs in contrast to 90/10 required for annual monitoring. Since the

				95/10 confidence/precession applied in the WBTs tests and the results of 2022 WBTs test applied which would give conservative results as efficiency degrades with time. Therefore, VVB accepted the approach undertaken by PP on the conservative grounds.
μ_y	Adjustment to account for any continued use of pre-project devices during the year y	2.37%	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 PP 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 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 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 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 PP 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 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 VMR006, version 1.1). 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 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.

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 variables 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.

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 VMR006, version 1.1, emission reductions shall be calculated as:

$$ER_y = \sum_i \sum_j ER_{y,i,j} - LE_y$$

Where;

i = Indices for the situation where more than one type of project device is introduced to replace the pre-project devices

j = Indices for the situation where there is more than one batch of project device

ER_y = Emission reductions during year y in tCO_{2e}

$ER_{y,i,j}$ = Emission reductions by project device of type i and batch j during year y in tCO_{2e} LE_y = Leakage emissions in the year y

Since the grouped project activity involves the deployment of improved cookstove, the following equation is applicable as per VMR0006 version 1.1:

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

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

$f_{NRB,y}$: Fraction of woody biomass that can be established as non- renewable biomass (fNRB)

$NCV_{biomass}$: Net calorific value of the non-renewable woody biomass that is substituted (IPCC default for wood fuel, 0.0156 TJ/tonne, based on the gross weight of the wood that is „air-dried")

$EF_{projected\ fossil\ fuel}$: Emission factor for the fossil fuels projected to be used for substitution of non-renewable woody biomass by similar consumers.

$N_{y,I,j}$: Number of project devices of type i and batch j operating during year y

μ_y : Adjustment to account for any continued use of pre-project devices during the year y when applying equations 6 and 8 (fraction). Use 1.0 in other cases

$B_{y,savings,I,j}$ is calculated using the following formula in accordance with equation 6 of the approved methodology:

Option 3: Water boiling test: $B_{y,savings,i,j} = B_{old,i,j} \times L_y \times [1- (\eta_{old,i,j}/ \eta_{new,i,j})]$

Where:

$B_{old,i,j}$: 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

L_y: Leakage adjustment factor or 0.95 (as per default value) of VMR0006

$\eta_{old,i,j}$: Efficiency of the old devices being replaced by project devices of type i and batch j

$\eta_{new,i,j}$: Efficiency of the project device i and batch j.

The baseline saving shall be determined as:

$B_{old,i,j} = B_{old,HH} / N_{d,HH}$

Where,

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

$N_{d,HH}$: Number of project devices per household (number)

Determination of the fraction of non-renewable biomass:

The fraction of woody biomass that can be established as non-renewable, is:

$f_{NRB} = NRB/(NRB + RB)$

Where:

f_{NRB} = Fraction of non-renewable biomass in the country/region or project area (fraction or %)

NRB = Quantity of non-renewable biomass (t/yr) in the country/region or project area

RB= Quantity of renewable biomass in the country/region or project area.

Project Emissions:

As per the methodology the PEy is considered zero.

Hence, PEy= 0 is acceptable to the verification team.

Leakage:

As per the methodology, N/A (Leakage is already accounted in baseline emission as 5% in accordance with the methodology).

Summary of ERs calculated by PP is demonstrated in below table and verified as per the ER spread sheet submitted:

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 Limited has been contracted by, 'C-Quest Capital Malaysia Limited' to undertake verification and certification for the greenhouse gas (GHG) emission reductions reported *from* 'ONIL STOVES —GUATEMALA – USPANTÁN' (VCS ID 1721) for the monitoring period 01-October-2021 to 30-September-2022 (Inclusive of both days), under the crediting period 20-December-2020 to 19-December-2030, in the initial monitoring report version 01 dated 31-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 01.2.

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-October-2021 to 30-September-2022 (Inclusive of both days)

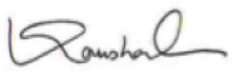
Verified GHG emission reductions and removals in the above verification period:

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
2021 **(01-Oct-2021 to 31-Dec-2021)**	22,867	0	0	22,867
2022 **(01-Jan-2022 to 30-Sep-2022)**	67,525	0	0	67,525
Total	90,392	0	0	90,392

Ex-ante emissions reductions/removals (tCO_2e)	*Achieved emissions reductions/removals (tCO_2e)*	*Percent difference*	*Justification for the difference*
100,287	90,392	- 9.9%	The achieved emissions reduction is 9.9% less than Ex-ante emission reduction. This can be attributed to: 1. Reduction in stove efficiency 2. Reduction in proportion of operational stove

Location: Faridabad

Date: 25/07/2023



Authorized Signatory: Kaushal Goyal

Designation: Managing Director

KBS Certification Services Limited

APPENDIX 1: REFERENCES

Ref	Document
/01/	Monitoring Report titled: 1. ONIL STOVES —GUATEMALA – USPANTÁN Version 01 dated 31 January 2023 2. ONIL STOVES —GUATEMALA – USPANTÁN Version 1.1 dated 11 March 2023 3. ONIL STOVES —GUATEMALA – USPANTÁN Version 1.2 dated 18 July 2023
/02/	ER sheet corresponding to: 1. /01/ 2. /1.1/
/03/	Sales and Distribution Database
/05/	Sample Household Survey Questionnaire
/06/	WBT Records: 1. WBT Test report 2. Summary of WBT Results
/07/	• End User Sales records/ carbon waiver • Monitoring/Survey and installation reports. • Declaration that project is not claiming ERs under any other GHG mechanism • Spreadsheet for the ex-ante ER demonstration.
/08/	Project Description for the ONIL STOVES —GUATEMALA – USPANTÁN
/09/	• Ex-ante ER sheets • Registered VCS PD • Validation Report • Verification Report of Previous Verifications Under VERRA • Fnrb spreadsheet (as part of registered documents) https://registry.verra.org/app/projectDetail/VCS/1721
/10/	• Stoves Technical Specifications and WBT Test Reports • Extended Life Time Certificate by the stove manufacturer • Operation & Maintenance Records • Grievance mechanism
/11/	Training Records and Training Material for Monitoring Personnel

/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 VMR0006: Methodology for Installation of High Efficiency Firewood Cookstoves, Version 1.1 • 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 04 • VCS Standard, Version 4.4 • VCS MR Template, Version 4.2

APPENDIX 2: FINDINGS

Summary of findings	CL	CAR	FAR
	08	02	00

verification)

~~FAR ID~~	~~xx~~	~~Section no.~~		~~Date:~~ DD/MM/YYYY
~~Description of FAR~~				
~~Project participant response~~		~~Date: :~~ DD/MM/YYYY		
~~Documentation provided by project participant~~				
~~DOE assessment~~		~~Date:~~ DD/MM/YYYY		

Table 1. CL from this validation/verification

CL ID	CL 01.	Section no.	*Section 1.1, 1.10 of the MR*	**Date:** 02/03/2023
Description of CL				
a. Under section 1.1 of the VCS MR, the chronology of the monitoring survey is provided. It was observed that the first monitoring survey was presented it from 01-February-2017 to 28-March-2017. The first verification period of the project is from 19-December-2010 to 31-July-2017, therefore the criteria of first monitoring survey mentioned is not clear to the verification team. PP shall clarify the rationale of criteria for the monitoring surveys. b. 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:** 10/03/2023	
a. In section 1.1 of the VCS MR, PP has rephrased the statement for better clarity to the verification team. *b.* In the current project, the PP itself is involved in manufacturing as well as distribution of the project stoves and hence can be considered as the implementing partner as well. To provide further clarity about the VCUs rights, PP (CQC) has provided the confirmation to the other PP (HELPS) over an email about the rights of VCUS. A copy of the mail communication for scope 3 emission with the HELPS has been provided to the verifying team and added in the Annexure of the revised MR.				
Documentation provided by project participant				
a. VCS MR v1.1 *b.* VCS MR v1.1				
DOE assessment			**Date:** 17/03/2023	
a. The chronology has been updated and the applicable/relevant monitoring survey history pertaining to the current MP is clearly described. Finding is closed. b. 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:** 02/03/2023

Description of CL

a. Section 1.10 and other sections of the VCS MR, the CDM terminologies e.g. CPA, POA etc are mentioned, PP shall clarify how the CDM terminologies are applicable to this project considering the project is registered as standalone VCS project.
b. Under table 1of 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.
c. 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.
d. For the demonstration of SDG15, the value of By,saving is mentioned as 5.5095 tons, verification team could not verify the number in the ER spreadsheet, PP shall clarify the basis of arriving on the figure..

Project participant response	**Date:** 10/03/2023

a. *PP has corrected the statements and the same updated in VCS MR.*
b. *The table no 1 in section 1.10 has been updated and the PP has removed SDG 1 from the table. PP would like to claim the achievement of 5 SDGs including SDG 4,7, 13, & 15. Evidence corresponding to the claimed SDGs have been provided to verification team.*
c. *SDG 8 is not being claimed by the PP and hence the same has been removed from the revised MR.*
d. *The value of By,saving mentioned was a typo error. PP has corrected the mentioned By,saving value to 5.0569, and the verification team can verify the same in ER spreadsheet.*

Documentation provided by project participant

VCS MR v1.1

ER spreadsheet

DOE assessment	**Date:** 17/03/2023

a. The updated MR has the programme specific terminology, finding is closed now.
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 value of parameter $B_{y,saving}$ has been updated by the PP, the value is now consistent with the ER sheet wherein the saving calculation is adequately demonstrated based on the survey results.

Finding is closed now.

CL ID	CL 03.	Section no.	*2.2 of MR*	**Date:** 02/03/2023
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.				
Project participant response			**Date:** 10/03/2023	
A formal mechanism is in place which is used to record the feedback and challenges faced by the end-users on a regular basis. A dedicated helpline number has been provided to all the end-users on which they can connect with the PP anytime as per their requirement and get all their concerns resolved and provide their feedback. In addition, regular checks (termed as monitoring) is conducted by the PP to ensure that all the end-users are satisfied with the stoves and address their concerns if any. A copy of the report explaining this process has been provided to the verifying team.				
Documentation provided by project participant				
Monitoring check report (Spot check)				
DOE assessment			**Date:** 17/03/2023	
The justification provided by PP is accepted based on the review of the survey forms and the interviews undertaken onsite during the site visit. Finding is closed now.				

CL ID	CL 04.	*Section no.*	*Section 3.2.2 of VCS MR*	*Date: 02/03/2023*
Description of CL				
Under section 3.2.2, a project deviation has been applied. PP shall clarify and transparently report that how the project complies with the requirements of section 3.20.2 of VCS standard, version 04 for the project deviation. PP shall also clarify while applying the simple random sampling, the representation from each vintage was considered into account.				
Project participant response		**Date:** 11/03/2023		
A clarification regarding the compliance of project description deviation has been provided in section 3.2.2 of the revised PD.				
Documentation provided by project participant				
VCS MR v1.1				
DOE assessment			**Date:** 20/03/2023	
The section 3.2.2 of the updated MR has been updated to include the requirements of the deviation with respect to the cited para of VCS standard. By reviewing the sampling results VVB also observed that the vintage is also part of chosen random sampling. Based on the updated MR and review of the sampling methodology, the finding is closed.				

CL ID	CL 05.	Section no.	*4.2 of the VCS MR*	**Date:** 02/03/2023
Description of CL				
Clarify how value of monitored parameter $N_{y,i,j}$ and discount (non-operational status) used in the ER calculation. VVB found that the cell for $N_{y,i,j}$ in tab "Data & Parameter" E35 is not linked with any of the calculation in the ER spreadsheet.				
Project participant response		**Date:** 10/03/2023		
PP clarifies that the Proportion of installed ICS operating i.e., py in tab "Data & Parameter" E27 used in ER calculation in tab "Summary_ER" D11 & D12. The color of a particular cell has been highlighted in yellow.				
Documentation provided by project participant				
ER spreadsheet				

DOE assessment	Date: 17/03/2023
Finding is closed after the clarification and review of highlighted information in the revised ER spreadsheet. CL is closed now.	

CL ID	CL 06.	Section no.	*4.2 of the VCS MR*	**Date:** 02/03/2023

Description of CL

a. It is not clear whether the efficiency (ICS) was monitored for each vintage using the WBT protocol or the dropdown applied as per the formula shown in the ER spreadsheet. PP shall clarify it as the ambiguity within the documents. The MR states that the annual monitoring was undertaken, however the formula in the ER spreadsheet has the dropdown method as per methodology.
b. The vintage wise efficiency drop is not calculated in the ER spreadsheet. Moreover, the values presented are in 15 digits after decimal. PP shall demonstrate the compliance of formula in the ER spreadsheet and also round down the efficiency values in a conservative manner?

Project participant response	**Date:** 10/03/2023

a. PP would like to clarify that the efficiency of the stoves has been estimated using the WBT protocol. Even though the PP had taken a methodology deviation from AMS II.G to VMR0006 for this project but the stove efficiency parameter still continued to be measured using the WBT protocol. Hence, PP would like to clarify that the efficiency value for each vintage reported in the ER sheet has been taken from the survey results.
*b. PP would like to clarify that the sampling approach is consistent with the one defined under CDM (ref link:*https://cdm.unfccc.int/ProgrammeOfActivities/poa_db/NQIZR3S1J58FLTHUKMB2X6PY07CE49/view?cp=1 *). The sampling is conducted at a biennial frequency, i.e., all the monitoring parameters are monitored once every two years. Considering the validity of the survey results, the efficiency values for vintages 10, 11, and 12 were already available with the PP from the findings of the survey conducted in the year 2020. However, as reported in the ER sheet, there are a few stoves that fall under vintage 13, for which WBT results were not available, hence the PP conducted simple random sampling to estimate the efficiency values for vintage 13 stoves. The same has been reported in the MR and ER sheet as well. Also, the representation of efficiencies have been changed and 15 digits after the decimal have been removed to round down the efficiencies in a conservative manner.*

Documentation provided by project participant

Workable Survey sampling sheet, WBT Data set

DOE assessment	**Date:** 17/03/2023

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. Clarification accepted based on the ground of using the WBT method instead of the dropdown as per the VMR0006. The vintage representation is part of WBT monitoring therefore the finding is closed after reviewing the WBT reports and the explanation provided. Finding is closed now.

CL ID	CL 07.	Section no.	*4.2 of the VCS MR*	**Date:** 02/03/2023
Description of CL				
It has been observed by the verification team that 13 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:** 10/03/2023		
PP would like to clarify that regular monitoring is undertaken to ensure that the ONIL stove is work for extended lifetime. The same evidence has been provided to the verifying team.				
Documentation provided by project participant				
Please mention the document provided to KBS along with the above response				
DOE assessment			**Date:** 20/03/2023	
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. Finding is closed now.				

CL ID	CL 08.	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:** 10/03/2023		
All the relevant documents required for verification has been provided to the verifying team.				
Documentation provided by project participant				
Relevant documents folder				

DOE assessment	Date: 17/03/2023
All documents sought in a-d are being furnished to VVB, the documents were used as part of desk review. Finding is closed now.	

Table 2. CAR from this validation/verification

CAR ID	CAR 01	Section no.	*4.3 of the VCS MR*	Date: 02/03/2023
Description of CAR				
The sampling presented in the VCS MR is not clear with respect to the sample size calculation, how the expected proportion 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:** 11/03/2023		
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				
DOE assessment				**Date:** 17/03/2023
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: 02/03/2023
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 py under data and parameter is punched rather linkage with the survey. b. Efficiencies of all vintages are also punched. c. $\eta_{new,l}$ is also considered for 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:** 10/03/2023		

a. *The value py is referred from the sampling sheet. PP will provide the verification team with the new ER spreadsheet and sampling sheet for better clarity.* b. *PP has punched all the efficiencies values from the WBT result in the 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 have been provided to the VVB.*
Documentation provided by project participant
VCS MR v1.1 *ER spreadsheet* *Sampling sheet*
DOE assessment — **Date:** 17/03/2023
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.

Table 3. FAR from this verification

~~**FAR ID**~~	~~xxx~~	~~**Section no.**~~		~~**Date:** DD/MM/YYYY~~
~~**Description of FAR**~~				
~~**Project participant response**~~				~~**Date:** DD/MM/YYYY~~
~~**The documentation provided by project participant**~~				
-				
~~**DOE assessment**~~				~~**Date:** DD/MM/YYYY~~

APPENDIX 3: COMPETENCE OF TEAM MEMBERS

Personnel Name:	Sanjay Kandari
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		
Energy Industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources		
Energy demand	TA 3.1. Energy Demand		
Waste Handling and Disposal	TA 13.1 Waste Handling and Disposal TA 13.2 Manure		
Approved by (Manager C & T)	Gagandeep Kakkar		
Approval date:	03/11/2015		

Personnel Name:		Tushar Chaudhari	
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		
Energy Industries (renewable/non-renewable sources)	TA 1.1: Thermal energy generation from fossil fuels and biomass including thermal electricity from solar		
Energy industries (renewable/non-renewable sources)	TA 1.2: Energy generation from renewable energy sources		
Energy demand	TA 3.1. Energy Demand		
Waste Handling and Disposal	TA 13.1 Waste Handling and Disposal		
Approved by	Manager Competency & Training		
Approval date:	02/09/2020		

Personnel Name		Sanjay Suresh Patankar			
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 (India and Bhutan)	☒		
Area(s) of Technical Expertise					
Sectoral Scope		Technical Area			
SS 01: Energy industries (renewable/non-renewable sources)		TA 1.1. Thermal energy generation			
		TA 1.2. Renewables			
SS 3: Energy demand		TA 3.1. Energy demand			
Approved by (Manager Competence & Training)		Dr. Indu Dwivedi			
Approval date		17-02-2023			

APPENDIX 4: CALIBRATION DETAILS OF MONITORING EQUIPMENT USED FOR WBT

Equipment	Make/ Serial Number	Calibration date	Validity till
Digital scales	#267871-06 #267834-06	26/04/2021 – 13/05/2021	12/05/2024
Firewood moisture meters	23207 23209	26/04/2021 – 13/05/2021	12/05/2024
Digital thermometers	Fluke 51 II TRACEABLE	26/05/2022	25/05/2023