

VERIFICATION REPORT OF DISTRIBUTION OF ONIL STOVES - MEXICO

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Summary:

C-Quest Capital LLC has commissioned the validation/verification body AENOR to perform a verification of VCS Project Activity "Distribution Of Onil Stoves - Mexico" in Mexico (hereafter "project activity") for the period from January 1, 2011 to December 31, 2012.

HELPS International and C-Quest Capital registered the "PoA 8521: Distribution of ONIL Stoves – Mexico" under the CDM on 07 December 2012 and included the first CPA, called: Distribution of ONIL Stoves – Mexico, San Felipe Usila 1, on the same date. Whereas, the project was included under the registered CDM PoA 8521 on 7 December 2014; CPA-DD states that the starting date of the crediting period is 1 January 2013 and hence the crediting period for claiming the emission reductions under VCS ends on 31 December 2012, which is the last day of the monitoring period. Therefore, it is confirmed that the emissions reductions are not being double counted during this period.

Since emission reductions occurred prior to the registration of the project as CDM Programme of activity, these emission reductions cannot be claimed as Certified Emission Reduction (CERs). The emission reductions are thus claimed as Voluntary Carbon Units (VCU) and verified on the basis of the Voluntary Carbon Standard (VCS) version 3.4 for GHG emission reduction and removal projects, a gap validation with the cover page and sections 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4 and 1.13 of the VCS Project Description Template was validated to comply with VCS rules.

The project proponent applied the methodology CDM Methodology: AMS-II.G. Version 3 - Energy efficiency measures in thermal applications of non-renewable biomass. In addition, the Standard for Sampling and Surveys in CDM Project Activities and Programme of Activities version 3.0 (EB 69 Annex 4); Guidelines for Sampling and Surveys in CDM Project Activities and Programme of Activities version 2.0 are used; these documents includes 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 purpose of such verification is to have an independent, third party assess of the Monitoring Report and Gap validation report. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant VCS issues and criteria are validated in order to confirm that the documentation sounds reasonable and meets the stated requirements and identified criteria.

The verification consisted of the following three phases: i) a desk review of the Monitoring Report and Gap Validation 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. In the course of the verification process 7 corrective actions and 4 clarifications were raised, all have been successfully closed. The list of Clarification and Corrective Actions Requests (CL and CAR) is presented in Appendix 2.

AENOR confirms that the project is implemented in accordance with the validated and CDM-SSC-PoA-DD and CDM-SSC-CPA-DD; then, claimed emissions reductions are calculated without material misstatements.

AENOR has performed the verification Distribution Of Onil Stoves - Mexico on the basis of all issues and criteria of VCS Standard (version 3.4) and VCS Program Guide (version 3.5) for VCS projects and also on the criteria given to provide for consistent project operations, monitoring and reporting. Hence,

in AENOR's opinion the project correctly applies the baseline and monitoring methodology AMS-II.G. Version 3 "Energy efficiency measures in thermal applications of non-renewable biomass" and meets the relevant UNFCCC requirements for the CDM Methodology, Voluntary Carbon Standard requirements and the relevant host country criteria.

Therefore, AENOR is able to certify that the emissions reductions from the "Distribution Of Onil Stoves Mexico" project during the period from January 1, 2011 to December 31, 2012 amount to 22.059 tonnes of CO₂e.

Table of Contents

1	Introduction	5
1.1	Objective	5
1.2	Scope and Criteria	5
1.3	Level of Assurance.....	6
1.4	Summary Description of the Project	6
2	VERIFICATION PROCESS	6
2.1	Method and Criteria.....	6
2.2	Document Review	7
2.3	Interviews	8
2.4	Site Inspections	9
2.5	Resolution of Findings.....	10
2.5.1	Forward Action Requests	10
2.6	Eligibility for Validation Activities	10
3	Validation Findings.....	11
3.1	Participation under Other GHG Programs	11
	Cover page	12
3.2	Methodology Deviations	12
3.3	Project Description Deviations	12
3.4	Grouped Project	12
4	Verification Findings.....	12
4.1	Project Implementation Status	12
4.2	Accuracy of GHG Emission Reduction and Removal Calculations	13
4.3	Quality of Evidence to Determine GHG Emission Reductions and Removals	27
4.4	Non-Permanence Risk Analysis.....	28
5	Verification conclusion	28
	APPENDIX 1: REFERENCE LIST	30
	APPENDIX 2: VCS VERIFICATION PROTOCOL	31

1 INTRODUCTION

C-Quest Capital LLC has commissioned AENOR to carry out the verification of VCS Project Activity “Distribution of Onil Stoves - Mexico” in Mexico for the period from January 1, 2011 to December 31, 2012. This report contains the findings from the verification and a certification statement for the certified emission reductions.

1.1 Objective

The objective of the verification is the review and ex-post determination by a Validation/Verification Body (VVB) of the GHG emission reductions that have been achieved as a result of the implementation of the project during a defined verification period. It includes the determination and evaluation that:

- The project activity has been implemented and operated as per the registered CDM-SSC-PoA-DD /1/ and CDM-SSC-CPA-DD /2/ and that all physical features (technology, project equipment, and monitoring) of the project are in place;
- The VCS monitoring report /3/, Project description (Gap Validation) /4/ and other supporting documents provided are complete and verifiable and in accordance with applicable CDM/VCS requirements;
- The actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology; and
- The data is recorded and stored as per the monitoring methodology.

1.2 Scope and Criteria

The verification scope is:

- to verify that actual monitoring systems and procedures are in compliance with the monitoring systems and procedures described in the monitoring plan;
- to evaluate the GHG emission reduction data and express a conclusion with a reasonable level of assurance about whether the reported GHG emission reduction data is free from material misstatement;
- to verify that reported GHG emission data is sufficiently supported by evidence.

The project is assessed against the requirements of VCS Standard, version s 3.4 /5/ and VCS Program Guide (version 3.5) /6/ for VCS projects. AENOR has conducted the verification based on the recommendations in the latest version of CDM Validation and Verification Standard /7/, and employed a rule-based approach as criteria, focusing on the identification of significant reporting rules and the reliability of project monitoring.

Verification is not meant to provide any consultancy towards the project participants. However, stated requests for clarifications and/or corrective actions may have provided input for improvement of the monitoring.

1.3 Level of Assurance

The verification report is based on the VCS-PD; small-scale CDM programme of activities design document (CDM-SSC-PoA-DD) and small-scale CDM programme activity design document (CDM-SSC-CPA-DD), the VCS Monitoring Report (MR), supporting evidences made available to the verifier and information collected through performing interviews and during the on-site assessment.

All the revisions of the verification report before being submitted to the client were subjected to an independent internal technical review to confirm that all verification activities had been completed according to the pertinent AENOR's instructions. The technical review was performed by a technical reviewer(s) qualified in accordance with AENOR's qualification scheme for CDM/VCS validation and verification.

The verification team and the technical reviewers consist of the following personnel:

Name	Position in the team
Pablo Taboada Utrera	Chief Verifier
Richard Gonzales Toledo	Verifier
Jose Antonio Gesto	Technical Reviewer

The verification has been planned and organized to achieve a reasonable level of assurance, with respect to material errors, omissions, and misrepresentations.

1.4 Summary Description of the Project

Distribution of ONIL Stoves – Mexico is a small-scale CDM programme of activities (PoA) and San Felipe Usila 1 small-scale CPA (SSC-CPA) is the first CPA included in the PoA. It involves the distribution and installation of ONIL Stoves for use by households in Mexico; which includes 12,885 improved cook stoves benefiting families throughout the country. Before the adoption of the ONIL Stove, households in Mexico used inefficient, conventional open fires.

HELPS International AC is the implementer of this project. HELPS International manufactures the ONIL stoves and distributes them to communities throughout Mexico.

This project was registered under the CDM as the “ONIL Stoves —Mexico, San Felipe Usila 1” which is first CPA of “PoA: Distribution of ONIL Stoves—Mexico” (CDM PoA 8521).

2 VERIFICATION PROCESS

2.1 Method and Criteria

The project assessment aims at a risk based approach and is based on the methodology developed in the VCS Standard (version 3.4) an initiative of Designated and Applicant Entities, which aims to harmonize the approach and quality of all such assessments. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using AENOR internal procedures.

The verification of the project was started on 10 January 2014 and concluded on 05 August 2014. The verification was performed in three phases,

- A desk review of the VCS-MR, VCS-PD (Gap validation) against CDM methodology AMS II.G., version 3 “Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass” /8/; CDM-SSC-PoA-DD; CDM-SSC-CPA-DD and other VCS relevant criteria;
- Desk review was followed by a site visit to the project site, which includes visits to many installed stoves in Mexico and interviews with relevant personals to determine whether the operational and data collection procedures are implemented and in accordance with monitoring plan of the validated CDM-SSC-CPA-DD; and
- Following the completion of the assessment process by the verification team, all documentation underwent an internal quality control through a technical review. The technical reviewer is a qualified member of AENOR, independent from the team that carried out the validation of the project activity. The technical reviewer or the team appointed for the technical review are qualified in the technical area and sectoral scope of the project activity.

In order to ensure transparency, verification and Gap validation protocol was customized for the project. The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results derived from validating the identified criteria. The Verification protocol serves the following purposes:

- It organizes, provides details and clarifies the requirements a VCS project is expected to meet.
- It ensures a transparent verification process where the verification team will document how a particular requirement has been verified and the result of the verification

The completed validation and verification protocol is enclosed in Appendix 2 to this report.

2.2 Document Review

The Project document submitted by the PP was reviewed against the approved CDM methodology and against VCS Program and other relevant criteria. Reviewed document included:

- Registered CDM-SSC-PoA-DD: Distribution of ONIL Stoves—Mexico /1/
- Included CDM-SSC-CPA-DD: Distribution of ONIL Stoves – Mexico, San Felipe Usila 1 /2/
- VCS Monitoring Report /3/
- Emission reduction calculation spread sheet: “*VCU Estimations V5*” /09/
- Statistical analysis of water boiling tests spread sheet: “*WBT data and results*” /10/;

- Monitoring database spread sheet: “*Monitoring data VCUs*” /11/; and
- Other supporting documents related to the project implementation, project design and monitoring and emission reduction calculation.

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.

To address the corrective actions and clarification requests that arose from the desk review and on-site visit, the consultant revised the initial documents submitted and developed the final VCS-MR and final Gap Validation Report.

All documents assessed during validation are listed in Appendix 1.

2.3 Interviews

A site visit to the project activity was undertaken from 24 to 28 February 2014 to assess the implementation and operation of the project activity; review evidence and interview key personnel to confirm evidence associated with the data generation, emission reduction calculation and reporting of the monitoring parameters.

The key personnel interviewed and the main topics of the interviews are summarized in the table below:

Interviewed organization Person/Position	Interview topics
HELPS • Richard Grinell. VP&COO Helps • Rodolfo Díaz Jiménez. Director Helps México • Kristel Dorion. Consultant • Andrea Santos. Monitoring coordinator • Oscar Pacheco Bautista. Field technician C-Quest capital • Javier Lascurain. Consultant Grupo Interdisciplinario de Tecnología Rural Apropiable A. C. (WBT laboratory) • Dr. Victor Berrueta. Coordinator Rural Energy Programme.	• Flows for generating, aggregating and reporting the monitoring parameters. • Crosscheck between information provided in the monitoring report and data from the monitoring system, log books, purchase records, handwritten records. • Monitoring report and emission reduction calculations. • Testing of monitoring equipment and observation of monitoring practices. • Calibration of monitoring equipment. • Running of specific checks and trials on data sources and data management practices where non conformities are detected. • Clarifications related to monitoring procedures. • Sufficiency of monitoring plan. • Reliability of internal and external data.

	• Internal data quality control. • Implementation of ex-post installation surveys. • Post installation WBTs (energy efficiency tests)
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2.4 Site Inspections

From 24 to 28 February 2014, two members of AENOR's verification team carried out an on-site visit to a sample of households in states of Mexico where the CDM-CPA was implemented (Guanajuato and Oaxaca). The sample households included the following villages from Oaxaca and Guanajuato:

Villages/customer households in Oaxaca

- Santa Lusía Mihuatlán
- San Sebastián Río Hondo
- Santiago Tlazoyaltepec
- Santa Maía Peñoles
- San Bernardo Mixtepec

Villages/ customer households (Guanajuato)

- La Noria
- Sacromonte
- Obrejitos de Abajo
- Misión de Arnedo

Also, the on-site visit included interviews with key personnel to confirm evidence. During the visit the verification team was able to see the programme activity implementation and carried out:

- An assessment of the implementation and operation of the project activity as per the registered CDM-CPA-DD.
- A review of information flows for generating, aggregating and reporting the monitoring parameters.
- A cross-check between information provided in the Monitoring Report and data from other sources such as log books, inventories, purchase records or similar data sources.
- A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD and the selected methodology.
- A review of calculations and assumptions made in determining the GHG data and emission reductions.
- An identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.

2.5 Resolution of Findings

As an outcome of the verification process, verification team can raise different types of findings (corrective actions, clarifications or other findings) according to the rules and requirements governing the VCS Program.

A Clarification Request (CL) is raised if information is insufficient or not clear enough to determine whether the applicable VCS requirements have been met; or

Where a non-conformance arises the verification team shall raise a Corrective Action Request (CAR). A CAR is issued, where:

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

Forward Action Requests (FARs) are issued for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.

The project participants were requested to address all verification findings and finally provided the verification team with sufficient evidence to determine that the applicable VCS requirements have been met. The project participant modified the initial monitoring report to resolve the verification team concerns and resubmitted a final version. AENOR has prepared this report based on the final monitoring report.

To guarantee the transparency of the verification process, the issues raised, the responses provided by the project participants, the means of validation of such responses and references to any resulting changes in the Monitoring report or supporting annexes are documented in the Verification/Validation Protocol in Appendix 1.

2.5.1 Forward Action Requests

Project verification resulted without any forward action requests.

2.6 Eligibility for Validation Activities

According to VCS programme Guide the validation/verification body shall hold such accreditation or approval for validation or verification (as applicable) for the sectoral scope(s) applicable to the methodology applied to the project.

Spanish Association for Standardisation and Certification (AENOR) complies with the requirements of the CDM Accreditation Standard for Operational Entities and is accredited in all sectoral scopes (1 to 15) for validation and verification activities, under CDM rules.

Therefore, AENOR as Validation/Verification body (VVB) holds accreditation for validation and verification for the relevant sectoral scope applicable to the project activity: Sectoral Scope 3/ energy demand. Hence, is eligible for validation/verification for the project activity.

3 VALIDATION FINDINGS

This project was *registered* under the CDM as the “ONIL Stoves —Mexico, San Felipe Usila 1” which is first CPA of “PoA: Distribution of ONIL Stoves—Mexico” (CDM PoA 8521). Therefore, AENOR only performed validation for the project on those additional requirements by VCS. This validation was completed as part of the current verification.

During the course of the gap validation process 02 corrective action requests (CAR) and 02 clarifications (CL) were raised. No methodology deviations or project descriptions were observed in the project activity.

The completed validation and verification protocol is enclosed in Appendix 2 of this report.

3.1 Participation under Other GHG Programs

The project activity was registered under CDM, with reference: PoA 8521. The component project activity is within programme of activity. Details of the CDM registration are the following:

- PoA: Distribution of ONIL Stoves—Mexico, registration date 7 December 2012.
- CPA: Distribution of ONIL Stoves – Mexico, San Felipe Usila 1, date of inclusion 7 December 2012.

According to Section 3.11.8 of the VCS-Standard: *“For projects validated under the CDM as a Program of Activities (PoA), each CDM Program Activity (CPA) shall be registered as a separate project accompanied by its associated Program of Activities Design Document. Each such project shall be validated in accordance with Section 3.11.9. The project start date for such projects is the date on which the first activity under the Program of Activities began reducing or removing GHG emissions. Where the project start date is before 8 March 2011, validation shall be completed within four years of the project start date; otherwise, validation shall be completed within two years of the project start date (in this case, validation refers to validation of the first CPA under the associated PoA).”*

Considered start date of the project is 30 December 2009 (before 8 March 2011) which is the date of the first stove installation after the publication of the PoA; hence, the date when program of Activities began reducing GHG emissions, date was verified against minutes of delivery /12/ and CPA data base. Due to the fact that the project was registered under CDM on 7 December 2012 project, project meets the requirement of being validated within four years of the start date, as established in the standard.

Furthermore, as the project is already registered under CDM, only the cover page and sections 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4 and 1.13 of the VCS Project Description Template shall be completed. AENOR has undertaken a validation in accordance with the provision of paragraph 1 of section 3.11.9 of the standard.

Cover page

The Cover page of the final version of the project description (VCS-PD) is verified to be correctly completed according to VCS Project Description Template, version 3.2.

Sectoral Scope and Project Type

VCS sectoral scope: 3. Energy demand

Via checking the registered CDM-SSC-PoA-DD; CDM-SSC-CPA-DD; VCS-PD, CDM-PoA validation report /13/, CDM-CPA Validation Report /14/ and through site visit, AENOR considers that the project is eligible to participate under VCS program.

The completed validation (Gap Validation) I is enclosed in Appendix 2 of this report.

3.2 Methodology Deviations

No methodology deviations apply to the project activity and project meets the methodology

3.3 Project Description Deviations

Not applicable.

3.4 Grouped Project

The project activity is not a grouped project activity.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

The implemented CPA involves distribution of fuel-efficient stoves in Mexico. The program installed 3 stoves in 2009 (these stoves were excluded from the estimation of emissions reductions, as there were installed in a region that was deemed unsafe for the project implementer to monitor), 4,361 stoves in 2010 and 8,524 in 2011, for a total of 12,885 stoves installed for this project. The monitoring period (01-January-2011 to 31- December -2012) covered all these stoves.

It was confirmed, through the monitoring database, that the CPA involves distribution and installation of only 12,885 stoves and thus does not exceed the number of stoves as stated in the CPA (13,859). The project activity has less than the 13,859 units stated in the CPA-DD because; during the quality control check some were removed.

During the visit AENOR was able to verify that the project has been implemented as planned and as mentioned in the registered CPA-DD by visiting a sample of 40 households selected at random from the records available at the offices of the PP in respective zones and city offices and the survey samples.

AENOR verification team performed two independent samples among households included in the monitoring system. One of the samples was chosen from the list of households where the $n_{y,j}$ and SS_y parameters were monitored, the other sample was chosen from households where the $n_{new,i}$ were monitored (stoves where the WBTs were performed the site visit)

To verify the result of the calculation of confidence/precision, AENOR has followed the Guideline: Sampling and surveys for CDM project activities and programmes of activities. Version 03.0 (EB 75, Annex 8) /15/.

The project is already registered under CDM (another GHG program) as a CPA. Whereas, the project was included under the registered CDM PoA 8521 on 7 December 2014; CPA-DD states that the starting date of the crediting period is 1 January 2013 and hence the crediting period for claiming the emission reductions under VCS ends on 31 December 2012, which is the last day of the monitoring period. Therefore, it is confirmed that the emissions reductions are not being double counted during this period.

In addition, during desk review and on-site visit was confirmed that the project has not received or sought any other form of environmental credit for the project. Also, it was verified that the project has not been rejected from other GHG program after validation and; therefore, it was not necessary to a complete revalidation of the project against the VCS rules, as stated in paragraph 3 of section 3.11.11 of VCS-Standard.

Overall the project activity was implemented as described in the registered/included CPA-DD. Verification team confirmed that the component project implementation is in accordance with the project description contained in the registered/included CPA-DD. No material discrepancies were identified between project implementation and the project description.

4.2 Accuracy of GHG Emission Reduction and Removal Calculations

The monitoring has been carried out in accordance with the provision of monitoring plan; the verification team reviewed if:

- The monitoring of reductions in GHG emissions resulting from the proposed VCS project activity were implemented in accordance with the monitoring plan contained in the registered CPA-DD.
- The monitoring plan and the applied methodologies had been properly implemented and followed by the project participants.
- All parameters stated in the monitoring plan, the applied methodologies and relevant CDM EB decisions had been sufficiently monitored and updated.
- The responsibilities and authorities for monitoring and reporting were in accordance with the responsibilities and authorities stated in the monitoring plan.

The monitoring system and all applied procedures are in compliance with the monitoring plan contained in the registered PoA-DD, CPA-DD and the applied methodology AMS-II.G. ver.03, 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. The PP performed the following monitoring steps:

1. **User registered stove.** PP field personnel collected the information in the Registration Card from the users. Information was collected via a Registration Card filled by staff and partner organizations. The PP staff double-checked the accuracy of the information and requested clarifications if needed.
2. **Data logged into database.** PP trained staff inputted the information from the Registration Card into the database. PP staff checked the database records and removed duplicates (this included completing the serial number, checking for name duplicates, etc...).
3. **Spot-checks (ongoing).** PP staff visited locations in the field and reported updates to office either via telephone or forms. PP personnel corrected the database and clearly marked stoves that were not installed, were given away, the end user died or left town, or had any other issues that made the stove no longer eligible to participate in the CPA. These stoves were excluded from the emission reduction calculations.
4. **Monitoring.** PP staff followed the sampling plan outlined in the PoA-DD (Section E.7.2) and reported in section D.2 of registered CPA-DD. Data was collected in the field from 09/07/2013 to 06/12/2013
5. **Preparation of monitoring report.** PP prepared the final monitoring report and retained copies of the document.

Steps 1, 2 and 3 captured end user information and populated the database, as well as provided database quality control.

Step 4 involved sampling surveys to capture data on continuous use of stove ($n_{y,j}$) and use of baseline or secondary fires (SS_y) as well as stove efficiency ($\eta_{new,i}$) as described in the table below.

Parameter	Description of Parameter	Sampling approach (outcome in brackets)
$n_{y,j}$	Proportion of ONIL Stoves still in operation	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 (Yes/No)
SS_y	Percentage of continued baseline stove use among ONIL stove households in the database	Interview with end user and visual inspection to determine if a baseline (replaced) stove is still being used in addition to ONIL stove (Yes/No)
$\eta_{new,i}$	Thermal Efficiency of operational ONIL Stoves	ONIL Stoves will be tested using WBTs (ONIL stove thermal efficiency)

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

Sampling captured information on monitoring variables with required confidence/precision (in that case as a single CPA is sampled, it is required a 90/10 confidence/precision for annual monitoring) and used multi-stage sampling (as per of EB 69 Annex 5 Section E). The method involved, in a first stage, grouping ONIL stoves by implementer and model and randomly selecting villages to sample. In a second stage, stoves within the selected municipalities are also randomly selected. Stoves were divided into Primary Sampling Units for $\eta_{new,i}$ (stoves managed by same CPA Implementer, of the same model and vintage – in this case all the stoves were managed by PP and were the same model) depending on the number of vintages (two vintages, 2010 and 2011, were sampled). Each stove vintage was sampled separately using the multi-stage sampling method.

Step 5 involved monitoring analyses and accuracy and precision checks. HELPS International, as CPA implementer and CQC, as CME, scrutinized the monitoring data to confirm accuracy of results, analyzed the data, and estimated the resulting emissions reductions outlined in this monitoring report.

The multi-stage sampling approach considered two stages. To sample parameter $n_{y,i}$ and SS_y (both parameters were captured in the same survey) , a third party randomly selected 63 villages from the entire population of 417 villages in the CPA database. On a second stage, the CME randomly selected around 15 stoves from each locality. Where the village had less than 15 stoves, the CME selected the closest stoves to that locality using GPS coordinates.

The procedure to sample parameter $\eta_{new,i}$ was similar. In this case, the procedure described here was applied to each of the stove vintages independently. In a first stage, a third party selected 11 villages from the population of villages in each stove vintage (187 villages for the 2010 vintage and 240 villages for the 2011 vintage). On a second stage, the CME randomly selected 3 stoves in each locality.

Parameters obtained in a pilot (see PoA-DD section E.7.2) were used to estimate sample sizes. However, the sample had to be expanded to reach a higher confidence/precision for parameter $n_{y,i}$. However, the samples could not obtain the 95/5 confidence/precision levels required for biennial sampling, so the CME chooses to apply the upper bound of the confidence interval, as per Methodology AMS-II.G version 3 paragraph 22.14

The following summarizes the sample sizes and results. Note: the below table uses the concept valid surveys. Valid surveys for each surveyed parameter were:

1. For parameter $n_{y,i}$, valid surveys were those in which it was possible to ascertain if the stove was still in use or not. In most cases, a complete survey was applied. In other cases, users could not be found, but it was possible to determine that stoves were no longer in use. These cases are considered as valid surveys too because surveyors could ascertain stoves were no longer in use. The initial number of surveys to be applied was 945; however, response rates for surveys were 91.43%, so the total number of valid surveys for parameter $n_{y,i}$ were 864 (945×0.9143).

2. For parameter SSy, valid surveys are the subsample of $n_{y,i}$ valid surveys where stoves continue to be in operation (i.e. $n_{y,i}=1$). Section E.7.1 of the PoA-DD (Description of measurement methods and procedures to be applied for parameter SSy) states: "A survey will be conducted surveying households if they use a second (baseline) stove as per the monitoring plan outlined in Section E.7.2 of the PoA-DD. SSy will be calculated in each monitoring period as follows: the number of sampled households with operational ICS that also continue to use a baseline stove divided by the total number of operational ICS in the sample." Thus, the number of valid surveys for parameter SSy is smaller than the number of valid surveys for parameter $n_{y,i}$ as only operational stoves were considered.

Monitored Parameter	Survey Results	Achieved Precision/confidence	Sample size (villages/surveys)	Valid surveys
Proportion of stoves in operation ($n_{y,i}$)	0.53704	95%/11.73% (precision not met)	63/945	864

As the precision is not met; thus, the lower bound of the confidence interval is calculated as: $0.53704 \times (1 - 0.1177)$, which is equal to 0.4740.

Monitored Parameter	Survey Results	Achieved Precision/confidence	Sample size (villages/surveys)	Valid surveys
Stoves in operation (SSy)	0.4526	95%/16.61% (precision not met)	63/945	464

As the precision is not met; then, the lower bound of the confidence interval is calculated as: $0.4526 \times (1 + 0.16626)$, which is equal to 0.5278.

Monitored Parameter	Survey Results	Achieved Precision/confidence	Sample size (villages/surveys)	Valid surveys
Efficiency of 2010 ONIL Stove vintage	21.96%	95/8.29% (precision not met)	11/33	32
Efficiency of 2011 ONIL Stove vintage	22.2246 %	95/8.26% (precision not met)	11/33	30

As the precision/confidence is not met; then, the lower bound of the confidence interval is calculated as:

2010 vintage: $0.2196 \times (1 - 0.0829)$, which is equal to 20.14%

2011 vintage: $0.2246 \times (1 - 0.0826)$, which is equal to 20.60%

In the case of parameter precision levels were not attained from surveys. The Project proponents applied provisions of EB69 Annex 5 section "How to deal with failure to reach reliability", such as scrutinizing the data and collecting more samples. However, precision was still not attained. Therefore, project proponents followed the guidance on paragraph 22 of AMS-II.G version 03.0 which indicates: *"A statistically valid sample of the locations where the systems are deployed, with consideration, in the sampling design, of occupancy and demographics differences can be used to determine parameter values used to determine emission reductions, as per the relevant requirements for sampling in the General guidelines for sampling and surveys for small-scale CDM project activities. When biennial inspection is chosen a 95% confidence interval and a 5% margin of error requirement shall be achieved for the sampling parameter. On the other hand when the project proponent chooses to inspect annually, a 90% confidence interval and a 10% margin of error requirement shall be achieved for the sampled parameters. In cases where survey results indicate that 90/10 precision or 95/5 precision is not achieved, the lower bound of a 90% or 95% confidence interval of the parameter value may be chosen as an alternative to repeating the survey efforts to achieve the 90/10 or 95/5 precision.."* Thus, for the purposes of calculating emissions reductions, project proponents decided to use the upper bound (most conservative) of the confidence interval for this parameter. This value is calculated as follows:

$n_{y,i}$ (use of lower bound of confidence interval for conservativeness): mean value obtained in survey x (1-precision attained) = $0.53704 \times (1-0.1173) = 0.4740$. Thus, project proponents used an $n_{y,i}$ value of 0.4740 to estimate emissions reductions.

SS_y (use of upper bound of confidence interval for conservativeness): mean value obtained in survey x (1+ precision attained) = $0.4526 \times (1+0.1661) = 0.5278$. Thus, project proponents used an SS_y value of 0.5278 to estimate emissions reductions.

$n_{new,i}$ (use of lower bound of confidence interval for conservativeness): mean value obtained in survey x (1- precision attained) = $0.2196 \times (1-0.0829) = 0.2014$ for 2010 vintage stoves and $0.2246 \times (1-0.0826) = 0.2060$ for 2010 vintage stoves. Thus, project proponents used a thermal efficiency of 0.2014 for 2010 vintage stoves and 0.2060 for 2011 vintage stoves.

AENOR considers the technical references used were adequate taking into account the methodology and the EB provisions and guidelines for sampling. AENOR was able to reproduce the calculation obtaining the same results.

The collected data are summarized in a survey report provided to the verification team. The verification team checked the figures during the on-site visit by means of the review of the central database, household visits, and the handwritten records.

AENOR considers the procedure for sampling to be accurate, conservative and following the approved methodology AMS-II.G ver. 03 and the EB guidance for sampling.

The actual achieved confidence/precision obtained by AENOR (when reproducing the calculations) was the same than the indicated by the project proponent for each survey. Therefore, the requirement has been met.

To verify the result of the calculation of confidence/precision, AENOR has followed the Guideline: Sampling and surveys for CDM project activities and programmes of activities. As in the case of the calculation of the sample number, the reliability has been calculated taking into account the “absolute” 10% maximum error margin. This interpretation of the statistical calculation is allowed by paragraph 11 of the current Standard for sampling and surveys for CDM project activities version 4.1. /16/

During the visit AENOR was able to verify that the project has been implemented as planned and as mentioned in the registered CPA-PD by visiting a sample of 40 households selected at random from the records available at the offices of the PP in respective zones and city offices and the survey samples. AENOR verification team performed two independent samples among households included in the monitoring system. One of the samples was chosen from the list of households where the $n_{y,j}$ and SS_y parameters were monitored, the other sample was chosen from households where the $n_{new,i}$ were monitored (stoves where the WBTs were performed).

AENOR's verification on-site sampling:

AENOR has followed paragraph 21 to 27 of the Standard for sampling and surveys for CDM project activities and programme of activities (ver. 04.1).

AENOR confirms that the selected samples (as elaborated in the MR) by the project proponent for their monitoring surveys are representative of the population and that the required confidence and precision have been met. This is in line with the requirement of paragraph 21-22 of the sampling Standard and has been explained before.

In line with the requirements of the standard for sampling, AENOR has designed an acceptance sampling, and has verified a total of 40 samples (20 were chosen from the list of households where the $n_{y,j}$ and SS_y parameters were monitored -group A-, the other 20 were chosen from households where the $n_{new,i}$ were monitored -group B-) during the on-site visit to customer households and has found PPs survey records to be acceptable within the limits required of the applied standard as described below.

AENORs sample size of 40 samples for onsite visit was deemed to be adequate due to the following reasons:

AENOR selected an acceptable quality level at 1% (following the guidance of the Standard for sampling and surveys for CDM project activities and programme of activities (ver. 04.1). In line with paragraph 25 of the sampling standard, the maximum discrepancy (unacceptable quality level) was fixed at 20% of the determined sample size.

The maximum errors associated with the determination indicated in paragraph above shall remain at levels indicated below:

- A 10% chance that the DOE will wrongly reject the PPs records (producer's risk).
- A 10% chance that the DOE will wrongly accept the PPs records (consumer's risk).

Using the previous provisions, AENOR determined the size of the sample for the verification of each kind of monitoring survey as 20. (20 group A and 20 group B), and an acceptance number (maximum discrepancies admitted) of 1 for each survey.

This total sample size of 40 samples (20 + 20) is obtained by means of manual calculation and following the Guideline: Sampling and surveys for CDM project activities and programmes of activities. Ver. 03.0 (EB 75, Annex 8) in its Appendix 5: Best-practice examples – acceptance sampling.

Hence, AENOR confirms that the sampling size and the method of onsite verification were in line with the requirements of the sampling standard and confirms that the monitoring for the verified period has been carried out in accordance with the monitoring plan.

Therefore, in AENOR's opinion emission reductions have been calculated in accordance with the applied methodology AMS-II.G version 03; CPA-DD; and the VCS-PD. The PP has used monitored data and ex-ante fixed data including default values as mandated/permitted by the applied methodology. The values used for calculation of GHG emission reductions have been thoroughly checked by the verification team and was found appropriate and correct. The spread sheet submitted by the PP clearly and transparently mentions values of the data parameters used for calculation of emission reductions. The calculations are traceable and follow logical steps. The input values have been verified from the reliable and authentic sources including monitoring records and applied methodology. The emission reductions calculated were compared with the emission reduction spread sheet and found to be correct. No significant reporting risks have been identified for the data reported. The details of monitoring parameters used for calculation of emission reductions are provided below:

Monitored Parameters

Data / Parameter:	Number of ONIL Stoves in operation during the monitoring period. ($n_{y,i}$)
Measuring frequency:	-
Recording frequency:	Data from Registration Cards was uploaded to database continuously to come up with the overall number of stoves installed under the CPA. Monitoring surveys captured the fraction of operational ONIL stoves.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
Type of monitoring equipment:	Not applicable. Monitoring surveys and registration card records loaded into CPA database. Calculated from surveys, based on the fraction of ONIL stoves that remain in operation (0.53704) as determined by the monitoring survey which was applied to the overall number of stoves in the database

Value(s) of monitored parameter:	6,107 = 0.474 multiplied by 12,885 stoves eligible in the database) The number of eligible stoves to account for emissions reductions calculations is 12,885, three (3) less than the total in the CPA. The discrepancy arises from the fact that 3 stoves were located in areas which the CPA Implementer could not access for monitoring due to safety issues and were thus excluded from emissions reductions calculations.
Is accuracy of the monitoring equipment as stated in the PDD?	Not applicable
Calibration frequency /interval:	Not applicable
Is the calibration interval in line with the monitoring plan of the PDD?	Not applicable
Company performing the calibration:	Not applicable
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Not applicable
Is(are) calibration(s) valid for the whole reporting period?	Not applicable
If applicable, has the reported data been crosschecked with other available data?	Yes, with handwritten records and personal information from customers interviewed during on-site visit
How were the values in the monitoring report verified	Cross check of actual figures available at the moment of the site visit were checked with instant records of PP and the months from 01/01/2013 to 31/12/2013 were checked with records on PDF and Excel files and the database register.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes. The PP system assures the traceability of all records and the spreadsheets could assure correct emission reduction calculations in a transparent way

Data / Parameter:	The fraction of ongoing baseline stove use within the population of in-use ONIL Stoves during a monitoring period. (SS_y)
Measuring frequency:	Once per monitoring period
Recording frequency:	Once per monitoring period
Is measuring and reporting	Yes.

frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	
Type of monitoring equipment:	Not applicable. Calculated from surveys. Data for this parameter was collected using the same survey for the fraction of $n_{y,j}$. The number of households with operational ONIL stoves and continuing to use baseline stoves divided by the total number of households with operational ONIL Stoves.
Value(s) of monitored parameter:	52.78%
Is accuracy of the monitoring equipment as stated in the PDD?	Not applicable
Calibration frequency /interval:	Not applicable
Is the calibration interval in line with the monitoring plan of the PDD?	Not applicable
Company performing the calibration:	Not applicable
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Not applicable
Is(are) calibration(s) valid for the whole reporting period?	Not applicable
If applicable, has the reported data been crosschecked with other available data?	Yes, with handwritten registers and personal information from customers interviewed during on-site visit
How were the values in the monitoring report verified	Cross check of actual figures available at the moment of the site visit were checked with instant records of PP and the months from 01/01/2013 to 31/12/2013 were checked with records on PDF and Excel files and the database register.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes. The PP system assures the traceability of all records and the spreadsheets could assure correct emission reduction calculations in a transparent way
Data / Parameter:	Fraction of CPA monitoring period the stove is in operation (weeks in operation/total weeks in monitoring period) ($t_{y,j}$)

Measuring frequency:	-
Recording frequency:	Continuous monitoring. Registration Cards or surveys have date of installation of ONIL stoves. These dates are input in CPA database.
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
Type of monitoring equipment:	Not applicable. Since stoves monitored were installed prior to 2013 (and monitoring period is 2013), this value is always equal to 1.
Value(s) of monitored parameter:	0.72
Is accuracy of the monitoring equipment as stated in the PDD?	Not applicable
Calibration frequency /interval:	Not applicable
Is the calibration interval in line with the monitoring plan of the PDD?	Not applicable
Company performing the calibration:	Not applicable
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Not applicable
Is(are) calibration(s) valid for the whole reporting period?	Not applicable
If applicable, has the reported data been crosschecked with other available data?	Yes, with handwritten registers and personal information from customers interviewed during on-site visit
How were the values in the monitoring report verified	Cross check of actual figures available at the moment of the site visit were checked with instant records of PP and the months from 01/01/2013 to 31/12/2013 were checked with records on PDF and Excel files and the database register.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes. The PP system assures the traceability of all records and the spreadsheets could assure correct emission reduction calculations in a transparent way

Data / Parameter:	Efficiency of the ICS ($\eta_{new,i}$)
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Measuring frequency:	Water Boiling Tests were implemented over stove samples of 2010 and 2011 vintages (i.e. installed during 2010 and 2011) during monitoring period. Tests were executed between 19/07/2013 and 09/08/2013.-
Recording frequency:	-
Is measuring and reporting frequency in accordance with the monitoring plan and monitoring methodology? (Yes / No)	Yes.
Type of monitoring equipment:	• Digital scales • Firewood moisture meters • Digital thermometers • Thermocouples The Water Boiling Test (WBT) protocol used was the WBT version 4.2.2 published by the Global Alliance for Clean Cookstoves.
Value(s) of monitored parameter:	0.2014 (ICS distributed in 2010) 0.2060 (ICS distributed in 2011)
Is accuracy of the monitoring equipment as stated in the PDD?	Not applicable
Calibration frequency /interval:	Not applicable
Is the calibration interval in line with the monitoring plan of the PDD?	Not applicable
Company performing the calibration:	The WBTs were conducted by trained staff from the Grupo Interdisciplinario de Tecnología Rural Apropiable, A.C. (GIRA), a third party to the project. This laboratory has the needed accreditation and qualification for the performance of the tests. AENOR has verified the laboratory accreditation by means of a personal interview with the director of the Laboratory and the checking of the technical references.
Did calibration confirm proper functioning of monitoring equipment? (Yes / No):	Not applicable
Is(are) calibration(s) valid for the whole reporting period?	Not applicable
If applicable, has the reported data been crosschecked with other available data?	Yes, with handwritten registers and personal information from customers interviewed during on-site visit
How were the values in the monitoring report verified	Cross check of actual figures available at the moment of the site visit were checked with instant records of PP and the months from 01/01/2013 to 31/12/2013 were checked with records on PDF and Excel files

	and the database register. WBT reports from GIRA.
Does the data management (from monitoring equipment to emission reduction calculation) ensure correct transfer of data and reporting of emission reductions and are necessary QA/QC processes in place?	Yes. The PP system assures the traceability of all records and the spreadsheets could assure correct emission reduction calculations in a transparent way

Furthermore, after review fixed parameters/ex-ante parameters used for calculation of emission reductions, verification team conclude that it has been properly used on determining emission reduction calculation.

The different data sources mentioned above permit the comparison of the data and the detection of any deviation between them. Below is addressed how baseline emission, project emission, leakage and emission reduction are calculated

Baseline emissions (BE)

$$BE = N_{y,i} \times EF_{old,adjusted} \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\ fossil\ fuel}$$

Where:

$N_{y,i}$: Total number of stoves in operation for a full monitoring period equivalent within each SSC-CPA

$EF_{old,adjusted}$: Quantity of woody biomass that is used by baseline appliances

$f_{NRB,y}$: Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass (0.87)

$NCV_{biomass}$: Net calorific value of non-renewable woody biomass that is substituted (IPCC default value for fuel wood 0.015 TJ/tonne)

$EF_{projected\ fossil\ fuel}$: Emission factor for the substitution of non-renewable woody biomass by similar consumers. Use a value of 81.6 tCO₂/TJ

Emission reduction (ER)

However, the methodology does not calculate baseline and project emissions separately. Instead, the methodology calculates emission reduction using the following equations:

$$ER = B_{y,saving} \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\ fossil\ fuel} \times L$$

Where:

ER_y : Emissions reductions during the year in tCO₂e

$B_{y,saving}$: Quantity of woody biomass that is saved in tonnes

$f_{NRB,y}$: Fraction of woody biomass saved by the project activity in year y that can be established as non-renewable biomass (0.87)

$NCV_{biomass}$: Net calorific value of non-renewable woody biomass that is substituted (IPCC default value for fuel wood 0.015 TJ/tonne)

$EF_{projected\ fossil\ fuel}$: Emission factor for the substitution of non-renewable woody biomass by similar consumers. Use a value of 81.6 tCO₂/TJ

L : A net to gross adjustment factor (0.95 default) is applied above (equation (1) of AMS II.G, version 3) in order to adjust B_{old} to account for leakages as per paragraph 13 (a) of the methodology.

To calculate $B_{y,saving}$ we use Option 2 (paragraph 6 of AMS II.G)

$$B_{y,saving} = B_{old} \times \left(1 - \frac{n_{old}}{n_{new}}\right)$$

Where:

B_{old} : Quantity of wood fuel used in the absence of the project activity in tonnes

n_{old} : A default value of 0.10 may be optionally used if the replaced system is a three stone fire, or a conventional system with no improved combustion air supply or flue gas ventilation system, i.e. without a grate or a chimney.

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

And

$$B_{y,saving} = B_{old,adjusted} \times \sum_{i=1}^n N_{y,i} \left(1 - \frac{n_{old}}{n_{new,i}}\right)$$

Where:

$N_{y,i}$: Total number of stoves in operation for a full monitoring period equivalent within each SSC-CPA

n_{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.

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

Project emissions (PE)

$$PE = \left[N_{y,2010} \times \frac{n_{old}}{n_{new,2010}} + N_{y,2011} \times \frac{n_{old}}{n_{new,2011}} \right] \times f_{NRB,y} \times NCV_{biomass} \times EF_{projected\ fossil\ fuel}$$

Leakage (L)

According to the applied methodology, a net-to-gross adjustment factor of leakage of 0.95 is applied to calculate the emission reductions for the monitoring period.

Overall leakage would be estimated as follows:

$$L = (BE - PE) \times 0.05$$

Following the methods and formulae above, emissions reduction calculation for the crediting 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)
2011	13,895.07	6,862.33	351.64	6,681
2012	31,694.20	15,505.96	809.41	15,378
Total	45,589.27	22,368.28	1,161.05	22,059

PP provided the spreadsheets used for calculating the GHG emission reductions. AENOR has reproduced all these calculations to obtain the same results, hence, they are deemed quantified correctly in accordance with the project description and applied methodology; consistent with the evidence provided and cross-checked by AENOR. Furthermore, appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed, and assumptions and emission factor correctly applied and justified.

4.3 Quality of Evidence to Determine GHG Emission Reductions and Removals

AENOR was able to confirm that the calculations are based on authentic data. The spreadsheets used to calculate the VCU calculations and all figures were tracked, checked and found to be consistent.

The quality of supporting evidences submitted to the VVB for verification is adequate and found to be verifiable. Carbon rights /17/, CPA-Data base and other supporting documents related to quality and maintenance were checked by the verification team during the site visit to confirm the authenticity of the documents and to check the correctness of the calculation.

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 Appendix 1 of the MR.

4.4 Non-Permanence Risk Analysis

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

5 VERIFICATION CONCLUSION

AENOR has performed the verification of the emission reductions that have been reported for the project “Distribution of ONIL Stoves - Mexico” (CDM Registration PoA 8521) for the period 1 January 2011 to 31 December 2012.

In addition, AENOR has also carried out a validation of the project with regard to VCS requirements that apply to projects already registered under the CDM. AENOR was able to confirm that the project is in compliance with the VCS requirements for validation of projects already registered under the CDM.

Verification is performed in accordance with the relevant requirements for VCS and CDM rules.

AENOR conducted the verification on the basis of the approved methodology AMS II.G methodology, version 3, “Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass”; the monitoring plan contained in the registered CPA-DD and the final version of monitoring report. Verification included i) checking whether the provisions of the monitoring methodology and the monitoring plan were consistently and appropriately applied and ii) the collection of evidence supporting the reported data.

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

It is AENOR’s responsibility to express an independent GHG verification opinion on the GHG emissions and on the calculation of GHG emission reductions from the project for the period 01/01/2011 to 31/12/2012 based on the reported emissions reductions in the Monitoring Report for the same period.

In AENOR’s opinion the GHG emissions reductions of the “Distribution of ONIL Stoves – Mexico” for the period 1 January 2011 to 31 December 2012 are fairly stated in the final monitoring report.

The GHG emission reductions were calculated correctly on the basis of the approved methodology AMS II.G methodology, version 3, “Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass”; and the monitoring plan contained in the registered CDM-CPA-DD.

AENOR is able to certify that the emission reductions from the “Distribution of ONIL Stoves – Mexico” during the period 1st January 2011 to 31st December 2012 amount to 22,059 tonnes of CO2 equivalent, detailed as below:

Verification period: **From 01-January-2011 to 31-december-2012**

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)
2011	13,895.07	6,862.33	351.64	6,681
2012	31,694.20	15,505.96	809.41	15,378
Total	45,589.27	22,368.28	1,161.05	22,059

APPENDIX 1: REFERENCE LIST

- /1/ Registered Clean Development Mechanism Small-Scale Programme Of Activities Design Document (CDM-SSC-PoA-DD), version 15, dated on 23 November 2012.
- /2/ Clean development mechanism small-scale program activity design document (CDM-SSC-CPA-DD), version 15, dated on 23 November 2012.
- /3/ Final version of the monitoring report, version 03 (20/07/2014)
- /4/ Project Description (Gap), version 03, dated on 20 July 2014
- /5/ VCS Stantard, version 3.4, dated on 8 october 2013
- /6/ VCS Program Guide, version 3.5, dated on 8 October 2013
- /7/ CDM validation and verification standard, version 7,
- /8/ CDM methodology AMS II.G., version 3 “Energy Efficiency Measures in Thermal Applications of Non-Renewable Biomass”
- /9/ Emission reduction calculation spread sheet: “*VCU Estimations V5*”
- /10/ Statistical analysis of water boiling tests spread sheet: “*WBT data and results*”
- /11/ Monitoring database spread sheet: “*Monitoring data VCUs*”
- /12/ Minutes of delivery and receipt of the ONIL stove
- /13/ CDM –PoA validation report, dated on 3 December 2012
- /14/ CDM-CPA Validation Report, dated on 3 December 2012
- /15/ Guideline: Sampling and surveys for CDM project activities and programmes of activities. Ver. 03.0 (EB 75, Annex 8)
- /16/ Standard for sampling and surveys for CDM project activities version 4.1
- /17/ Warranty disclaimer (rights of carbon)

APPENDIX 2: VCS VERIFICATION PROTOCOL

VERIFICATION PROTOCOL

PROJECT:

“DISTRIBUTION OF ONIL STOVES—MEXICO”

PROJECT PROPONENTS:

HELPS INTERNATIONAL A.C.

C-QUEST CAPITAL LLC

MONITORING AND REPORTING PERIOD:

FROM 01/01/2011 TO 31/12/2012

Verification Team: Pablo TABOADA UTRERA - Chief Verifier Luis Javier ARRIBAS ALONSO - Verifier Richard Daniel GONZALES TOLEDO - Verifier	
Version of this Verification Protocol: 02	Date: 11/08/2014

TABLE 1: Validation and Verification Requirements Based on the VCS Standard, Version 3.4.

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
1. Gap Validation				
Does the used project title clearly enable to identify the unique VCS activity? Is it consistent in all section of the VCS PD and in all documents?	1.1	The project title is “ <i>Distribution of ONIL Stoves – Mexico</i> ”, which clearly identifies the project activity.	OK	OK
Are there any indication concerning the revision number and the date of the revision?	1.2	Yes, the VCS PD is dated on 20-July-2014 and refers to version 3.0	OK	OK
Is this consistent with the time line of the project’s history?	1.3	CAR 1: Considered crediting period, stated in section 1.6 of VCS-PD, is not in accordance with the time line of the project activity. Considered crediting period is in line with the time line of the project activity, it covers: January 1, 2011 to December 31, 2012, non-renewable. Therefore, the time line of the project’s history is consistent CAR 1 is closed	CAR 1	OK
Has the PD been listed on the project pipeline?	1.4	Yes, the project has been listed on the project pipeline before the opening meeting between the validation/verification body and the project proponent. According to the VCS webpage, pipeline documents were uploaded on 19 December 2013.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
Are the sectoral scope and the project type clearly stated?	1.5	Yes, it is sectoral scope 3, Energy demand.	OK	OK
Is the information required for the indication of project proponent correctly presented?	1.6	Yes, there two project proponents: Helps International A.C. and C-Quest Capital LLC. Both are correctly indicated.	OK	OK
Are there other entities other than the project proponent involve in the project?	1.7.	Not applicable.	N/A	N/A
Is all information on proponent / Parties provided in consistency with details provided by further chapters of the VCS PD?	1.8.	Yes, the information of Helps International A.C. and C-Quest Capital LLC are consistent in the entire VCS PD.	OK	OK
Is the project's start date clearly defined and reasonable?	1.9	CAR 2. The database "San Felipe Usila 1 CPA" includes April 27, 2010 as first date of installation of stoves, thus is not possible to confirm the start date of the project as it is reported in the VCS-PD and VCS-MR. (30/12/2009). PP is requested to clarify the difference between start date and project implementation schedule stated on both documents. Furthermore, according to the registered CMD/CPA-DD the distribution of stoves includes 13,859 units; while the VCS-MR and VCS-PD state 13,852 stoves. The monitoring report, also, states that distribution of ONIL stoves started on January 2010 (implementation status, section 2 of VCS-MR). The minutes of delivery and receipt of the ONIL stove has been provided to the verification team. It clearly states the starting date of	CAR 2	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
		the project. Regarding the difference between ONIL stoves listed in the CDM/CPA-DD and VCS-PD/VCS-MR; during the quality control check some were removed. Furthermore, the installed stoves (3 units) on 2009 were not monitored due to unsafe site condition; therefore, also removed from emission reduction calculation. CAR 2 is closed The start date of the project activity is 30/12/2009 which verified against minutes of delivery and receipt of the ONIL stove. Dates have been properly considered in the whole VCS-PD and VCS-MR.		
Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max 10 years with potential for 2 renewals)?	1.10	Yes. Section 1.6 of the VCS PD states that the crediting period starts on January 1, 2011 and ends on December 31, 2012. The proposed project activity is the first CPA of a registered CDM-PoA. Registration date of PoA and first inclusion of the CPA is dated on 07 January 2012. However, the starting date of the crediting period for this CPA is 01/1/2013. Therefore, considered crediting period is reasonable due to project proponents is not claiming credit for the same GHG emission reduction under the VCS Program and CDM program.	CAR 1 CAR 2	OK
Is the proposed project a large-project (ERs greater than 300,000 tCO ₂ e/year) or a project (ERs less or equal than 300,000 tCO ₂ e/year)?	1.11	The estimated emission reductions are less than 300,000 tCO₂e/year; therefore, the project is not categorized as large.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
Is the form required for the indication of projected emission reductions correctly applied?	1.12	Yes, the form for the indication of projected ERs is correct. CL 1: PP is requested to clarify how the emission reductions stated in section 1.7 of the VCS-PD were estimated. Estimated emission reduction considered in section 1.7 is the same as project emission calculated during the monitoring. CL 1 is closed	CL 1	OK
Does the information provided on the location of the project activity allow for a clear identification of the site(s)?	1.13.	The project activity is developed in many places located in Mexico. The coordinates, established in the CDM/CPA-DD are defines as follow: The Northernmost and Westernmost points are: 32.500000 and -117.033333 (Tijuana); Southernmost point: 14.550000 and -92.166667 (desembocadura del Rio Suchiate); Eastermost point: 21.200000 and -86.716667 (Isla Mujeres). The Validation/verification Body verified the coordinates against the information obtained during the on-site visit.	OK	OK
Describe the conditions prior to the project initiation. Explain why the project has not been implemented only with the purpose to generate ERs.	1.14	According to the CDM/CPA-DD the ONIL Stoves – Mexico, San Felipe Usila 1 small-scale CPA (SSC-CPA) involves the distribution and installation of ONIL Stoves for use by households in Mexico. HELPS International manufactures the ONIL stoves and distributes them to communities throughout Mexico. HELPS International sells to community organizations, private landowners or government agencies. Therefore, the project activity is primarily implemented for distributing improved cook stoves and not with the purpose to create GHG emissions and their subsequent reduction, removal or destruction.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
		The audit team confirmed this information during the onsite visit through meetings carried out.		
Compliance with laws, statutes and other regulatory frameworks	1.15	Project proponent comply whit local regulation established.	OK	OK
Right of use?	1.16	Helps International provides a “warranty” to ONIL stove users. The warranty transfers the rights of carbon credits generated from the use of the ONIL stoves to HELPS International. CL 2: During the on-site visit it was verified many warranties. It was found that some of them had been delivered after months of its installation. Owing to date stated in the warranties is later even than ONIL stove inclusion to the CMD-CPA; it was not clearly established if rights of carbon credit is valid from the installation date. Therefore, PP is requested to clarify how warranties delivered after installation ensures the rights of carbon credits of those stoves. Warranty disclaimer states that the stoves are part of the credit carbon program. Beneficiaries were informed about the programs and agreed to transfer the carbon credits. CL 2 is closed	CL 2	OK
Will the generated ERs be used for compliance with an emissions trading program, or to meet the binding limits on	1.17	No. The project is not included in an emissions trading program except being registered as CDM project, and does not take place in a jurisdiction or sector in which binding limits are established on GHG emissions.	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
GHG emissions?				
Is the project registered under any other GHG-program? Are the registration number and details clearly stated in VCS PD?	1.18	The project activity has been registered under CDM programs of Kyoto Protocol. The registration number is PoA 8521. Project activity is the first CPA included in the CDM programme of activities. A letter provided by HELPS International A.C. General Director of Mexico confirms that GHG emission reduction generated by the project have not and will not be counted or used in any other GHG emission trading mechanism and are not within the scope of any program or national cap, as stated in paragraph 3.11.2 in the VCS Standard v.3.4.	OK	OK
Does the project intend to generate any other form of GHG-related environmental credit? (e.g. renewable energy certificates)	1.19	By means of the undertaking letter from the PP it is demonstrated that the project does not intend to generate any other form of GHG-related environmental credit	OK	OK
Has the proposed project been rejected by any other GHG program?	1.20.	The proposed project has not been rejected by any other program.	OK	OK
In case of grouped projects, are there clear eligibility criteria for potential new participants (VCS term: Project Instances)?	1.21	The proposed project is not part of any other grouped project.	OK	OK
Is the leakage management properly described?	1.22	Yes, PP is following the procedures established in the applied methodology (AMS II.G, version 3), which states that leakage estimation under a programme of activities uses a net adjustment	OK	OK

Checklist Question	Ref	Comments	Draft conclusion	Final conclusion
		factor as an option to account for any leakages.		
Has commercially sensitive information been excluded from the VCS PD? Explain to which items this information refers to.	1.23	No commercially sensitive information has been excluded from the VCS PD.	OK	OK
Is there any further information available regarding the project?	1.24	All information in the project documents is available for the public review, as claimed by PP in the VCS Project Description.	OK	OK

2. Project history

Open issues from validation Check (in case of 1st periodic verification) whether there are any open issues indicated in the CDM validation report (e.g. FAR) Have they been addressed appropriately?	2.1.	There are no open issues indicated. Neither CDM/PoA Validation Report nor CDM/CPA validation Report states outstanding issues.	OK	OK
Open issues from previous verification Check (in case of further periodic verifications) whether there are any open issues indicated in previous verification (FAR) Have they been addressed appropriately?	2.2.	N/A. This is the first periodic verification.	N/A	N/A

Requests for Deviations/Revisions of Monitoring Plan Check if there have been any requests for deviations from the monitoring methodology or requests for revisions of the monitoring plan. If any, make sure that they are considered during verification	2.3.	There have not been any requests for deviations from the monitoring methodology or requests for revisions of the monitoring plan.	OK	OK
3. Project implementation in accordance with the CDM registered project document and the VCS project description				
Has the VCS project activity been implemented as per the registered CDM-PDD and VCS-PD?	3.1.	The project activity is registered under the Clean Development Mechanism of the UNFCCC; and the actual implementation and operation of the project activity is in accordance with the registered CDM/CPA-DD.	OK	OK
Are all physical features of the VCS project activity proposed in the PD, in place?	3.2.	CAR 3: The total amount of stoves installed per month listed in the table on page 9 of VCS-MR does not match with the figures included in the general database of the CPA (months of January from 2010 and 2011 do not match, the total annual either). The dates of installation of stoves are not able to be checked individually with documentation, because they are linked with purchase orders for batch of stoves. Thus it is not possible to know exactly when a stove has been installed or which was the final quantity of stoves installed in a specific year. VCS-MR has been corrected according to the dates established in the database and further evidence has been provided for the dates of installation. The verification team considers that proposed evidence is consistent and has been properly described in relevant documents.	CAR 3	OK

		CAR 3 is closed Yes. Physical features of the project activity, stated in VCS-PD, are in place.		
Have the project participants operated the VCS project activity as per the CDM-PDD and the VCS-PD?	3.3.	CL 3. The verification team has not been able to verify that the monitoring is being performed according to the steps of the flowchart included in the CDM/CPA-DD. As observed during the onsite visit, it is not clear that the PP (Helps International) is performing steps 3 (spot-checking) and 4 (Monitoring) independently, so this may lead to errors. PP is requested to clearly describe the steps actually followed during monitoring performance. PP has updated the MR in accordance with the monitoring plan. Moreover, procedures established have been followed as stated in the CDM/CPA-DD. CL 3 is closed	CL 3	OK
Actual status of installation works Project installation should be finished at time of initial verification in so far as the project should be ready to generate emission reductions afterwards. It shall be clearly described the starting date of operation and the progress of the project activity. Is the implementation delayed? What were the reasons for the delay?	3.4.	According to the VCS-PD, the date of first ONIL Stove installation in this CDM-CPA had been 30/12/2009, while the date of last ONIL Stove installation in this CDM-CPA, during monitoring period, was 31/12/2011. It was verified against data base. The project installation (San Felipe Usila 1 CPA) was finished at the time of initial verification, no delay were identified and the starting date is clearly described in VCS-PD and VCS-MR.	CAR 2	OK

Project boundaries Check whether the project boundaries are still in compliance with the ones indicated by the PD.	3.5.	Yes. The project boundaries are in compliance with those indicated in the VCS PD and registered CDM/CPA-DD.	OK	OK
On-site visit Was an on-site visit conducted? If not, justify the rationale of the decision.	3.6.	The on-site visit was conducted from 24 to 28 February 2014. The verifier team visited more than 40 households in Oaxaca and Guanajuato states.	OK	OK
4. Update on Changes and Incidents (during the Monitoring Period)				
Incidents Identify if there have been any significant incidents, deviant operation modes and/or downtimes of the equipment? Consider e.g. interviews with operational personnel, operational log sheets and analysis of performance data.	4.1.	Not significant incidents have been identified. This has been verified by means of interviews during the on-site visit.	OK	OK
Is the information (data and variables) provided in the monitoring report different from that stated in the PD? Has it caused an increase in estimates of the emission reductions in the current monitoring period or is highly likely to increase the	4.2.	No. All data and variables provided in the Monitoring Report are consistent with the PD. There is no increase in estimates of the emission reductions	OK	OK

estimates of emission reductions in the future monitoring periods?				
Personnel Find out, if relevant monitoring personnel have been exchanged? In case of changes, assure that the implemented monitoring procedures have not been affected.	4.3.	No relevant monitoring personnel have been exchanged as verified during on site visit.	OK	OK
Legislation Find out whether relevant legislation with effect on the project activity in the host country has been changed.	4.4.	No relevant legislation affecting the project activity has changed in the host country.	OK	OK
5. Monitoring Report – General				
Is the monitoring report (and other supporting documents) provided complete in accordance with latest applicable version of the VCS Program Guide?	5.1.	Yes, provided monitoring report and supporting documents are in accordance with VCS programme guide.	OK	OK
Is the VCS Monitoring Report Form used by the Project Participants in the monitoring report?	5.2.	Yes, Last version (3.3) of VCS-MR is used.	OK	OK

Monitoring period Check if the monitoring period is in line with a) the crediting period and/or b) previous monitoring periods?	5.3	Considered crediting period is from 1, 2011 to December 31, 2012, non-renewable.	CAR 1	OK
Transparency Assess if the monitoring report is transparent, i.e. clear and unequivocal	5.4.	Yes, the monitoring report is clear and unequivocal.	OK	OK
Misstatements on general issues Assess whether the monitoring report is free of material misstatements regarding issues other than the monitoring parameters. Discuss the monitoring parameters in detail in chapter "Monitoring Parameters".	5.5.	The monitoring is free of material misstatements regarding issues other than the monitoring parameters.	OK	OK
6. Compliance of the monitoring plan with the monitoring methodology.				
Is the validated monitoring plan of the proposed VCS project activity in accordance with the applied methodology?	6.1.	Yes, the validated monitoring plan of the proposed CDM project activity is in accordance with the methodology AMS-II.G ver. 03	OK	OK

Are there any monitoring aspects of the project activity that are not specified in the methodology, particularly in the case of small-scale methodologies (e.g. additional monitoring parameters, monitoring frequency and calibration frequency)?	6.2.	No, all the monitoring aspects are specified in the methodology.	OK	OK
7. Compliance of monitoring with the monitoring plan				
Is the monitoring of reductions in GHG emissions to result from the proposed VCS project activity implemented in accordance with the monitoring plan contained in the PD or the accepted revised monitoring plan?	7.1.	Yes, monitoring of reductions in GHG emissions is implemented in accordance with the monitoring plan.	OK	OK
Have the monitoring plan and the applied methodology been properly implemented and followed by the project participants?	7.2.	Yes, both have been properly implemented.	CL 3	OK
Have all parameters stated in the monitoring plan, the applied methodology and relevant CDM Executive Board decisions been sufficiently monitored and updated as applicable (Project	7.3.	CAR 4: Not all the parameters established in the monitoring plan and registered CDM/CPA-DD have been included in the MR, i.e. efficiency of the ICS ($n_{new,j}$). Therefore, PP is requested to update the MR considering all monitoring parameters. The parameter were included in the MR.	CAR 4 CL 4	OK

emission, baseline emission, leakage, management and operational system and environmental and social parameters)		CAR 4 is closed CL 4: PP is requested to explain the different meanings, in the monitoring report, of “valid surveys” for the monitored parameters $n_{y,i}$ and for SS_y. PP has properly clarified the meaning of “valid surveys” for the parameters $n_{y,i}$ and SS_y. Descriptions are included in the monitoring report and are in accordance with applied methodology and monitoring plan CL 4 is closed Yes, all parameters stated in the monitoring plan, the applied methodology has been sufficiently monitored and updated as applicable.		
Are the responsibilities and authorities for monitoring and reporting in accordance with the responsibilities and authorities stated in the monitoring plan?	7.4.	All important monitoring tasks are established adequately and are in accordance with the responsibilities and authorities stated in the Monitoring Plan.	OK	OK
8. Monitoring Parameters				
8.1. $n_{y,i}$	8.1.	<i>“Number of ONIL Stoves in operation during the monitoring period”</i>		
Measurement / Determination method Describe how the monitoring parameter was measured / determined. Check if relevant equipment has been exchanged and if in cases	8.1.1	Calculated. Monitoring surveys and registration card records loaded into CPA database. CAR 5: Figures for the calculation of $n_{y,i}$ are wrong Calculation has been updated, considering correct number of stoves. Then, Overall proportion of stoves in operation ($n_{y,i}$) is correctly calculated.	CAR 5	OK

of failures / downtimes of standard equipment other measurement / determination methods have been used. Assess whether the measurement or determination method (data generation, frequency, aggregation, equipment, recording, reporting, standards) is in line with the registered monitoring plan of the PD and the applied methodology.		CAR 5 is closed		
Monitoring Equipment Is the equipment of used for monitoring (quality, type, accuracy, calibration requirements) in accordance with the relevant guidance provided by the CDM Executive Board and is equipment controlled and calibrated in accordance with the monitoring plan?	8.1.2	Monitoring surveys.	CAR 5	OK
Accuracy In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have	8.1.3	Inaccuracies were not detected.	CAR 5	OK

been considered for ER calculation.				
Monitoring results Are monitoring results consistently recorded as per approved frequency?	8.1.4	Yes, monitoring results were recorded as per approved frequency.	CAR 5	OK
Quality assurance and quality control procedures Have quality assurance and quality control procedures been applied in accordance with the monitoring plan to prevent or identify and correct any errors or omissions in the reported monitoring parameters?	8.1.5	Yes, quality assurance and quality control procedures have been applied in accordance with the monitoring plan.	CAR 5	OK
Verification Describe how the value and the information flow (from data generation, aggregation, to recording, calculation and reporting) were verified. Consider the measurement / determination procedure, accuracies, QA/QC procedure, source and nature of the evidences. Consider as well plausibility checks as far as possible. Check if the applied value could	8.1.6	This parameter has been verified against CPA data base.	CAR 5	OK

be backed up by corresponding evidences covering the full monitoring period.				
8.2. SS_y	8.2.	<i>“The fraction of ongoing baseline stove use within the population of in-use ONIL Stoves during a monitoring period”</i>		
Measurement / Determination method Describe how the monitoring parameter was measured / determined. Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Assess whether the measurement or determination method (data generation, frequency, aggregation, equipment, recording, reporting, standards) is in line with the registered monitoring plan of the PD and the applied methodology.	8.2.1	CAR 6. Information included in the description of the SS_y calculation is incorrect. More information shall be included in the monitoring report on the procedure implemented for the calculation of the parameter SS_y, once was known that the precision was not met in the survey results. Calculation has been updated, considering correct number of stoves. Then, Percentage of second stove use (SS _y) is correctly calculated. Emissions reductions, also, have been updated. CAR 6 is closed The parameter is determinate by surveys for usage of baseline stoves, as per the monitoring plan outlined in Section E.7.2 of the PoA-DD.	CAR 6	OK
Monitoring Equipment Is the equipment of used for monitoring (quality, type, accuracy, calibration	8.2.2	Monitoring surveys	OK	OK

requirements) in accordance with the relevant guidance provided by the CDM Executive Board and is equipment controlled and calibrated in accordance with the monitoring plan?				
Accuracy In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have been considered for ER calculation.	8.2.3 .	Inaccuracies were not detected.	CAR 6	OK
Monitoring results Are monitoring results consistently recorded as per approved frequency?	8.2.4 .	Yes, monitoring results were recorded as per approved frequency.	CAR 6	OK
Quality assurance and quality control procedures Have quality assurance and quality control procedures been applied in accordance with the monitoring plan to prevent or identify and correct any errors or omissions in the reported monitoring parameters?	8.2.5 .	Yes, quality assurance and quality control procedures have been applied in accordance with the monitoring plan.	CAR 6	OK

Verification Describe how the value and the information flow (from data generation, aggregation, to recording, calculation and reporting) were verified. Consider the measurement / determination procedure, accuracies, QA/QC procedure, source and nature of the evidences. Consider as well plausibility checks as far as possible. Check if the applied value could be backed up by corresponding evidences covering the full monitoring period.	8.2.6 .	This parameter has been verified against CPA data base and statistical analysis of monitoring results.	CAR 6	OK
8.3. $N_{new,i}$	8.3.	Efficiency of the ICS		
Measurement / Determination method Describe how the monitoring parameter was measured / determined. Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used.	8.3.1 .	The parameter was obtained from Efficiency tests conducted during the monitoring. Efficiency tests were performed using the Water Boiling Test (WBT) protocol version 4.2.2, published by the Global Alliance for Clean Cookstoves.	CAR 4	OK

Assess whether the measurement or determination method (data generation, frequency, aggregation, equipment, recording, reporting, standards) is in line with the registered monitoring plan of the PD and the applied methodology.				
Monitoring Equipment Is the equipment of used for monitoring (quality, type, accuracy, calibration requirements) in accordance with the relevant guidance provided by the CDM Executive Board and is equipment controlled and calibrated in accordance with the monitoring plan?	8.3.2	The WBTs were conducted by a third party: “ <i>Grupo Interdisciplinario de Tecnologia Rural Apropiaada, A.C.</i> ” (GIRA). Stoves were tested at the place of installation (i.e. in stove user households) using firewood available in the same households.	CAR 4	OK
Accuracy In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have been considered for ER calculation.	8.3.3	Inaccuracies were not detected		
Monitoring results	8.3.4	Yes, monitoring results were recorded as per approved frequency.	CAR 4	OK

Are monitoring results consistently recorded as per approved frequency?	.			
Quality assurance and quality control procedures Have quality assurance and quality control procedures been applied in accordance with the monitoring plan to prevent or identify and correct any errors or omissions in the reported monitoring parameters?	8.3.5 .	Yes, quality assurance and quality control procedures have been applied in accordance with the monitoring plan: Outliers were identified and removed from the sample, as established in the CDM PoA-DD section E.7.2.	CAR 4	OK
Verification Describe how the value and the information flow (from data generation, aggregation, to recording, calculation and reporting) were verified. Consider the measurement / determination procedure, accuracies, QA/QC procedure, source and nature of the evidences. Consider as well plausibility checks as far as possible. Check if the applied value could be backed up by corresponding evidences covering the full monitoring period.	8.3.6 .	The values were verified against GIRA reports and WBT data and results.	CAR 4	OK

8.3. $t_{y,i}$	8.4.	“Fraction of CPA monitoring period the stove is in operation”		
Measurement / Determination method Describe how the monitoring parameter was measured / determined. Check if relevant equipment has been exchanged and if in cases of failures / downtimes of standard equipment other measurement / determination methods have been used. Assess whether the measurement or determination method (data generation, frequency, aggregation, equipment, recording, reporting, standards) is in line with the registered monitoring plan of the PD and the applied methodology.	8.4.1	Calculated. Monitoring database and registration card records loaded into CPA database and length of monitoring period.	CAR 3	OK
Monitoring Equipment Is the equipment of used for monitoring (quality, type, accuracy, calibration requirements) in accordance with the relevant guidance	8.4.2	Monitoring surveys.	OK	OK

provided by the CDM Executive Board and is equipment controlled and calibrated in accordance with the monitoring plan?				
Accuracy In case of measured (or estimated) values, check whether significant inaccuracies occur; in this case, make sure that appropriate discounts have been considered for ER calculation.	8.4.3	Inaccuracies were not detected.	CAR 3	OK
Monitoring results Are monitoring results consistently recorded as per approved frequency?	8.4.4	Yes, monitoring results were recorded as per approved frequency.	CAR 3	OK
Quality assurance and quality control procedures Have quality assurance and quality control procedures been applied in accordance with the monitoring plan to prevent or identify and correct any errors or omissions in the reported monitoring parameters?	8.4.5	Yes, quality assurance and quality control procedures have been applied in accordance with the monitoring plan.	CAR 3	OK
Verification Describe how the value and the	8.4.6	This parameter has been verified against CPA data base and statistical analysis of monitoring results.	CAR 3	OK

information flow (from data generation, aggregation, to recording, calculation and reporting) were verified. Consider the measurement / determination procedure, accuracies, QA/QC procedure, source and nature of the evidences. Consider as well plausibility checks as far as possible. Check if the applied value could be backed up by corresponding evidences covering the full monitoring period.				
9. Compliance with the calibration frequency requirements for measuring instruments				
Has the calibration been delayed and the calibration has been implemented after the monitoring period in consideration (results of delayed calibration are available)? If so, which conservative approach has been adopted: a) Applying the maximum permissible error of the instrument to the measured values taken during the period between the schedule date of calibration	9.1	N/A	N/A	N/A

and the actual date of calibration, if the results of the delayed calibration do not show any error, or if the error is smaller than maximum permissible error, or b) Applying the error identified in the delayed calibration test, if the error is beyond the maximum permissible error.				
Has the error been applied: a) In a conservative manner, such that the adjusted measured values of the delayed calibration has result in fewer claimed emission reductions?, and b) For all measures taken during the period between the scheduled date of calibration and the actual date of calibration.	9.2	N/A.	N/A	N/A
If the results of the delayed calibration are not available, or the calibration has not been conducted at the time of the verification; has been request to the project participants to conduct the required calibration? If so, has the project participants	9.3	N/A	N/A	N/A

calculated the emission reductions conservatively?				
If it is not possible for the project participant to conduct the calibration at a frequency specified by either the applied methodology, guidance provided by the Board, and/or registered monitoring plan due to reasons beyond the control of project participants; has been followed the requirements for post registration changes in accordance with CDM VVS?	9.4	N/A	N/A	N/A
If calibration frequency for measuring equipments are not specified neither the monitoring methodology nor the monitoring plan; has the equipments been calibrated in accordance with specifications of the local/national standards, or as manufacturer's specification, or international standards?	9.5	N/A	N/A	N/A
10. Assessment of data and calculation of greenhouse gas emission reductions				
It is assessed if GHG emission reductions achieved by the proposed VCS project activity are calculated applying the	10.1.	Yes. The emission reductions achieved by the proposed project activity have been calculated applying the selected methodology.	OK	OK

selected methodology.				
Is a complete set of data for the specified monitoring period available? Are available evidences sufficient both in terms of frequency and in covering the full monitoring period? Are the source and the nature of evidences identified (external or internal, oral or documented, etc.)?	10.2.	Yes. A complete set of data is available for the specified monitoring period and the properly evidence to support them.	CAR 2 CAR 3 CAR 4	OK
Whether data were not available because activity levels or non-activity parameters were not monitored in accordance with the registered monitoring plan has the most conservative assumption theoretically possible been made?	10.3.	Not applicable, since data were available for the whole proposed monitored period.	OK	OK
Assess if the calculation is fully traceable. In case of complex calculations an Excel calculation spreadsheet shall be used. All applied formulae must be visible.	10.4	Yes, the spreadsheet provided is fully traceable.	CAR 4	OK
Is the spreadsheet with the emission reductions calculations provided complete?	10.5.	Yes, the spreadsheet provided is complete.	CAR 4	OK

Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis?	10.6.	Yes, information provided in the monitoring report been cross-checked with other sources	CAR 4	OK
Have calculations of baseline emissions, VCS project activity emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document?	10.7.	Yes, the calculations of baseline emissions, VCS project activity emissions and leakage have been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology.	CAR 4	OK
Have any assumptions used in emission calculations been justified?	10.8.	Yes. All the assumption an methodology for calculating emission reduction, were properly justified in the Monitoring report	CL 4	OK
Have appropriate emission factors, IPCC default values and other reference values been correctly applied? Are the most recent data incorporated into the calculation of the ex-post grid emission factor?	10.9.	N/A	N/A	N/A
11. Quality Management; defined organizational structure, responsibilities and competencies Internal QA/QC and document control				
Management System	11.1.	CAR 7. The identification code of the stove (called bar code) includes a year of installation, but in many occasions this does	CAR 7	OK

Have the GHG data monitoring system and all VCS monitoring procedures been implemented? Do they comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology?		not really match. During the onsite visit, the verification team found stoves whose identification code (stuck to the stove) did not match with which was included in the monitoring survey. These stoves had received a new code, and those changes were not traceable into the database records. In many cases during the onsite visit the verification team detected that warranty documents of the stoves (identified in the MR as Registration Card) have not been delivered to users at the time of installation of the stove, but much later, so that the identification of the stove does not faithfully include the moment of installation. This data base clearly identifies the stove. Furthermore, the stove installation has been checked against de minutes of delivery and receipt of the ONIL stove, which clearly defines the starting date of the project. CAR 7 is closed Yes, all the GHG data monitoring system and all VCS monitoring procedures have been implemented and they comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology.		
Roles and Positions Check if all roles and positions of each person in the GHG data management process are clearly defined and implemented, from raw data generation to submission of the final data. Check further if only duly	11.2.	Yes, roles and positions of each person in the GHG data management process are clearly defined and implemented as per “Monitoring and verification manual for CDM/VCS purposes”, and only qualified personnel is involved in the monitoring procedures.	OK	OK

qualified personnel is involved in the monitoring procedures.				
Trainings Check if initial trainings have been carried out, in case deemed necessary.	11.3.	Trainings for personnel involved in the monitoring procedures have been carried out. Evidences (records) of the training have been provided to the verification team.	OK	OK
Troubleshooting procedures Assess whether troubleshooting procedures have been implemented.	11.4.	Yes, troubleshooting procedures have been implemented and included in the quality management system	OK	OK
Maintenance procedures Are appropriate maintenance procedures in place?	11.5.	Yes, appropriate maintenance procedures are in place as part of the quality management system	OK	OK
Reporting procedures Check how reports with relevance for the later determination of emission reductions will be generated. Is the frequency of emissions reports established?	11.6.	All reports are recorded in a central database, or in a spread sheet and then in the database. There is no frequency established.	OK	OK
Internal QA/QC Assess whether there are any procedures in place on when, where and how checks and reviews are to be carried out, and what evidence needs to be	11.7.	The project proponent has implemented a quality management system. The QA/QC procedures is performed in the excel file "QA QC databases and comparisons"	OK	OK

documented? (This might include spot checks by a second person not performing the calculations over manual data transfers, changes in assumptions and the overall reliability of the calculation processes.)				
Data collection and data processing systems Check the eligibility of used systems. Does data collection system meet the requirements of the monitoring plan as per the applied methodology?	11.8.	Yes, data collection system meets the requirements of the monitoring plan.	OK	OK
Data archive Check whether all data of monitoring parameters are recorded and archived according to the monitoring plan and the approved methodology.	11.9.	All records of monitoring parameters are archived according to the monitoring plan.	CAR 2 CAR 3 CAR 4	OK
Data protection Assess whether appropriate measures have been take in order to avoid unintended or intended manipulation of the measured data.	11.10	The access to the databases is controlled and available only for authorized personnel.	OK	OK

Table 2: Resolution of Corrective Action and Clarification Requests.

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
CAR 1: Considered crediting period, stated in section 1.6 of VCS-PD, is not in accordance with the time line of the project activity.	1.3.	The crediting period stated in section 1.6 of VCS-PD has been corrected. The start date is now January 1, 2011 and the length of the crediting period is 2 years (end date is December 31, 2012). Gap validation report has been provided to the Verification Body.	Updated gap validation report shall be provided to the verification team. CAR 1 Remains open Gap validation report has been provided to verification team. Considered crediting period is in line with the time line of the project activity, it covers: January 1, 2011 to December 31, 2012, non-renewable. CAR 1 is closed
CAR 2. The database "San Felipe Usila 1 CPA" includes April 27, 2010 as first date of installation of stoves, thus is not possible to confirm the start date of the project as it is reported in the VCS-PD and VCS-MR. (30/12/2009). PP is requested to clarify the difference between start date and project implementation schedule stated on both documents. Furthermore, according to the registered CMD/CPA-DD the distribution of stoves includes 13,859 units; while the VCS-MR and VCS-PD state 13,852 stoves. The monitoring report, also, states that distribution of ONIL stoves started on January 2010 (implementation status, section 2 of VCS-MR).	1.9.	The start date of the project activity is 30/12/2009 as demonstrated by "estufas-ChimalapaOAX[1].pdf" which shows proof of delivery. Some stoves installed in 2009 are included in the CPA database but were not monitored due to safety concerns in the area, as demonstrated to the DOE with document entitled "ChimalapaconflictoDic30_09.pdf" and do not generate emission reduction in this monitoring period. The VCS-MR has been updated to 30/12/2009 date. The project activity has less than the 13,859 units stated in the CPA-DD because some stoves were removed during additional quality control checks. The number of stoves in the	The minutes of delivery and receipt of the ONIL stove has been provided to the verification team. It clearly states the starting date of the project. Regarding the difference between ONIL stoves listed in the CDM/CPA-DD and VCS-PD/VCS-MR, during the quality control check some were removed. Furthermore, the installed stoves (3 units) on 2009 were not monitored due to unsafe site condition; therefore, also removed from emission reduction calculation. Updated gap validation report

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
		project activity has been updated to 12,888. Updated gap validation report has been provided to the Verification Body.	shall be provided to the verification team. CAR 2 Remains open Gap validation report has been provided to verification team. The start date of the project activity is 30/12/2009. It was verified against minutes of delivery and receipt of the ONIL stove. Dates have been properly considered in the whole VCS-PD and VCS-MR. CAR 2 is closed
CAR 3: The total amount of stoves installed per month listed in the table on page 9 of VCS-MR does not match with the figures included in the general database of the CPA (months of January from 2010 and 2011 do not match, the total annual either). The dates of installation of stoves are not able to be checked individually with documentation, because they are linked with purchase orders for batch of stoves. Thus it is not possible to know exactly when a stove has been installed or which was the final quantity of stoves installed in a specific year.	3.2.	The table on section 2.1 of the VCS-MR has been corrected according to the dates established in the database. Further evidence has been provided for the dates of installation.	Monitoring report has been updated considering provided evidence. The verification team considers that proposed evidence is consistent and has been properly described in relevant documents. CAR 3 is closed
CAR 4: Not all the parameters established in the monitoring plan and registered CDM/CPA-DD have been included in the MR, i.e. efficiency of the ICS ($n_{new,i}$). Therefore, PP is requested to update the MR considering all monitoring parameters.	7.3.	The efficiency of the ICS ($n_{new,i}$) has now been included in the VCS-MR.	Monitoring report has been properly updated CAR 4 is closed
CAR 5: Figures for the calculation of $n_{y,i}$ are wrong	8.2.1	PPs have updated $n_{y,i}$ calculations and	Calculation has been updated. However, Average number of

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
		these are reflected in the VCS-MR. The number of stoves per locality has been updated. This resulted in changes to the precision levels attained and the value of the monitoring parameter. These new values have been incorporated into the emissions reductions calculations and VCS-MR.	stoves per locality (N) is still calculated using not valid number of stoves (13,852/417). Therefore, lower bound of 95% confidence interval for determining fractions $n_{y,i}$ and SS_y are not properly determined. CAR 5 remains open Calculation has been updated, considering correct number of stoves. Then, Overall proportion of stoves in operation ($n_{y,i}$) is correctly calculated. Emissions reductions, also, have been updated. CAR 5 is closed
CAR 6. Information included in the description of the SS_y calculation is incorrect. More information shall be included in the monitoring report on the procedure implemented for the calculation of the parameter SS_y, once was known that the precision was not met in the survey results.	8.2.1	PPs added further detail to SS_y and to the rest of the monitoring parameters calculation description in the MR in the following manner: Project proponents followed the guidance on paragraph 22 of AMS-IL.G version 03.0 which indicates: "In cases where survey results indicate that 90/10 precision or 95/5 precision is not achieved, the lower bound of a 90% or 95% confidence interval of the parameter value may be chosen as an alternative to repeating the survey efforts to achieve the 90/10 or 95/5 precision." Thus, for the purposes of calculating emissions reductions, project proponents decided to use the most	PP has updated the VCS-MR and emission reductions calculation, considering an appropriate description for the parameter SS_y. However, Average number of stoves per locality (N) is still calculated using not valid number of stoves (13,852/417). Therefore, lower bound of 95% confidence interval for determining fractions $n_{y,i}$ and SS_y are not properly determined. CAR 6 remains open Calculation has been updated,

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
		conservative bound of the confidence interval (upper for SS_y and lower for other parameters). The number of stoves per locality has been updated. This resulted in changes to the precision levels attained and the value of the monitoring parameter. These new values have been incorporated into the emissions reductions calculations and VCS-MR.	considering correct number of stoves. Then, Percentage of second stove use (SS_y) is correctly calculated. Emissions reductions, also, have been updated. CAR 6 is closed
CAR 7. The identification code of the stove (called bar code) includes a year of installation, but in many occasions this does not really match. During the onsite visit, the verification team found stoves whose identification code (stuck to the stove) did not match with which was included in the monitoring survey. These stoves had received a new code, and those changes were not traceable into the database records. In many cases during the onsite visit the verification team detected that warranty documents of the stoves (identified in the MR as Registration Card) have not been delivered to users at the time of installation of the stove, but much later, so that the identification of the stove does not faithfully include the moment of installation.	11.1	The bar code or series number of each stove is a 13-digit number to allow for unique identification of each stove. The series number is not meant to correspond to the year of installation; rather, it is uniquely linked in the database to other information related to that stove, such as end-user, location, date of installation, etc. Instances where stoves had been assigned two serial IDs have been clearly identified. These were the instances in which verification found mismatch between database and field serial number observations. Further documentation was provided as evidence to the dates of stove installation.	Updated data base were provided to the verification team. This data base clearly identifies the stove. Furthermore, the stove installation has been checked against de minutes of delivery and receipt of the ONIL stove, which clearly defines the starting date of the project. CAR 7 is closed
CL 1: PP is requested to clarify how the emission reductions stated in section 1.7 of the VCS-PD were estimated.	1.12	Updated gap validation report has been provided to the Verification Body.	Updated gap validation report has not been received

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
			CL 1 Remains open Estimated emission reduction considered in section 1.7 is the same as project emission calculated during the monitoring. CL 1 is closed
CL 2: During the on-site visit it was verified many warranties. It was found that some of them had been delivered after months of its installation. Owing to date stated in the warranties is later even than ONIL stove inclusion to the CMD-CPA; it was not clearly established if rights of carbon credit is valid from the installation date. Therefore, PP is requested to clarify how warranties delivered after installation ensures the rights of carbon credits of those stoves.	1.16	The warranty card specifies that HELPS is the party entitled to the benefits of the emissions reductions that may arise from the use of the stove. Furthermore, the warranty states that the stove is part of a carbon credit program. These elements are not constrained to the moment of warranty signature by the user. Thus, the project implementer is entitled to the emissions reductions arising from the stove at any specific moment in time.	Warranty disclaimer states that the stoves are part of the credit carbon program. Beneficiaries were informed about the programs and agreed to transfer the carbon credits. CL 2 is closed
CL 3. The verification team has not been able to verify that the monitoring is being performed according to the steps of the flowchart included in the CDM/CPA-DD. As observed during the onsite visit, it is not clear that the PP (Helps International) is performing steps 3 (spot-checking) and 4 (Monitoring) independently, so this may lead to errors. PP is requested to clearly describe the steps actually followed during monitoring performance.	3.3	PP presented the DOE with field evidence that monitoring steps were followed as described in the flowchart included in the CPA-DD. Step 3 (spot-checking) was performed at different times during process as demonstrated in documents entitled "Spotcheck##.pdf". The spot-check documents and updated MR been provided to the verifier.	PP has provided properly evidence of monitoring. Moreover, procedures established in the monitoring plan have been followed as stated in the CDM/CPA-DD. CL 3 is closed
CL 4: PP is requested to explain the different meanings, in the monitoring report, of "valid surveys"	7.3	1. PPs updated the MR to include the following information: For parameter $n_{y,i}$, valid surveys were	PP has properly clarified the meaning of " valid surveys " for

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
for the monitored parameters $n_{y,i}$ and for SS_y .		those in which it was possible to ascertain if the stove was still in use or not. In most cases, a complete survey was applied. In other cases, users could not be found, but it was possible to determine that stoves were no longer in use (e.g. stoves were abandoned in backyard or visibly destroyed). These cases are considered as valid surveys too because surveyors could ascertain stoves were no longer in use. The initial number of surveys to be applied was 945; however, response rates for surveys were 91.43%, so the total number of valid surveys for parameter $n_{y,i}$ were 864 (945×0.9143).¹ 2. For parameter SS_y, valid surveys are the subsample of $n_{y,i}$ valid surveys where stoves continue to be in operation (i.e. $n_{y,i}=1$). Section E.7.1 of the PoA-DD (Description of measurement methods and procedures to be applied for parameter SS_y) states: "A survey will be conducted surveying households if they use a second (baseline) stove as per the	the parameters $n_{y,i}$ and SS_y. CL 4 is closed

¹ The CME also excluded records which were not randomly selected or that were not the closest to the selected locality in cases where samples had to be complemented with the closest stoves.

Clarifications and corrective action requests by validation team	Ref. to table 1	Summary of project owner response	Validation team conclusion
		monitoring plan outlined in Section E.7.2 of the PoA-DD. SS_y will be calculated in each monitoring period as follows: the number of sampled households with operational ICS that also continue to use a baseline stove divided by the total number of operational ICS in the sample.” Thus, the number of valid surveys for parameter SS_y is smaller than the number of valid surveys for parameter ny_i as only operational stoves were considered.	