PROJECT REVIEW REPORT

Project ID	*1721*
Project Name	*ONIL Stoves —Guatemala – Uspantán*
Program(s)	*VCS*
Verification Period	*01 August 2018 – 31 August 2020*
Project Proponent	*1) HELPS International Incorporated* *2) C-Quest Capital LLC*
Methodology	*Registered under AMS-II.G., proposing to change to VMR0006*
Sectoral Scope(s)	*3 – Energy demand*
Validation/Verification Body (VVB)	*Earthood Services Private Limited*

Assessment Criteria	*VCS Standard, v4.1*
Date of First Issue	*16 July 2021*
Date of Final Issue	*3 September 2021*

Summary:

An accuracy review of the *ONIL Stoves —Guatemala – Uspantán* verification request has been conducted by Verra in accordance with Section 4.3 of the *Registration and Issuance Process*.

The accuracy review has raised 4 assessment findings and 1 minor finding, detailed below. The VVB, in coordination with the project proponent, is hereby required to provide a response to the assessment findings presented in Section 1. The 4 assessment findings must be addressed to the satisfaction of Verra. The VVB need not address the minor findings during this review.

This project review report will be made publicly available. Confidential information may be provided as separate attachments.

1. ASSESSMENT FINDINGS

Finding 1
VCS Standard, v4.1 Section 3.19.1 states that the project proponents shall not seek credit for the same GHG emission reduction or removal under the VCS Program and another GHG program. Verra notes that the CDM issuance request associated with the monitoring period of 1 September 2018 to 31 July 2019 for CPA 003 of PoA 8480, the DOE (Earthood) states (Verification Report, page 14) that the "CME has decided to take out CPA 001 and CPA 002 from this verification but the cookstoves included in these two CPAs have been included in CPA 003." Further, Verra notes that the number of stoves within CPA 003 for the same verification under the CDM Program was 21,918 (which is the combination of stoves included within CPA 001 (10,008), CPA 002 (9,992) and CPA 003 (1,918). Given that the present verification under VCS corresponds to CPA 001 of PoA 8480, registered under the CDM Program, and further considering that the monitoring period of the mentioned CDM verification is completely contained within the present VCS verification period, there is a potential risk of double issuance for credits from cookstoves within CPA 001 (10,868). The VVB is requested to explain how the verification period of 1 September 2018 to 31 July 2019 contained completely within the present VCS verification period (1 August 2018 – 31 August 2020), does not amount to double issuance of credits for the same GHG emission reduction originating from the same cookstoves.
Stove installation under the PoA 8480 has started under CPA001 from 11-January-2010 and under CPA002 from 19-February-2011. At the time of registration of the PoA and inclusion of CPA 001 and CPA 002, project developer had to limit the stove numbers owing to the small-scale threshold, which bars implementer not to cross the energy saving limit of 180GWth per CPA. At the time of starting the CDM verification for the monitoring period 1 September 2018 to 31 July 2019, during the submission of draft MR to DOE for webhosting, maximum number of stoves under each CPA were limited to the small-scale threshold (i.e., maximum 180 GWHth/year energy saving). Accordingly, stoves were distributed between all the CPAs included in the PoA at the time of webhosting of MR. In the meantime, UNFCCC has revised the “CDM Project Standard for Program of Activities” to version 02, which includes new paragraph 124 (m) which states that “If the generic CPA is small-scale or microscale, conditions to ensure that CPAs that will be included meet the small-scale or microscale thresholds and remain within those thresholds throughout the crediting period of the CPAs. However, if the generic CPA consists solely of units that qualify as “microscale CDM units” as defined in the “Methodological tool: Demonstration of additionality of microscale project activities”, these conditions are not required”. Accordingly, the improved cookstoves which qualify as the microscale CDM unit, were exempted from demonstrating small scale compliance at CPA level and thus implementer were not bound to keep maximum number of stove limit in each CPA. To apply this guideline in the PoA, project developer/CME had to request for Post Registration Change (PRC) and accordingly it got approved on 12 March 2020. However, after approval of PRC, PP decided not to include CPA 001 & CPA 002 under ongoing CDM verification for which MR already webhosted and migrated all additional stoves (which were not included in previous VCS verifications of CPA 001 and CPA 002) under CPA 003 only. Thus, all new stoves from CPA 001 and CPA 002 were migrated to CPA 003 during CDM verification. Therefore, only CPA 003 with all the newly installed cookstoves after previous monitoring period got verified under CDM. All the ICS considered for the mentioned verification were new installed cookstoves, which were not previously considered under any of the CPAs. PP did not claim carbon credits for the said stoves under CPA 001 & CPA 002 under CDM. ICS submitted for present VCS verification for the period from 01 August 2018 to 31 August 2020 are all the stoves installed till 17 August 2012 for CPA 001 and till 24 October 2016 for CPA 002. These stoves

are entirely different from the ICS got verified under CDM verification under CPA 003.

Therefore, there is no double counting of credits under CDM and VCS scheme for any of these stoves.

VVB Response:

The registered PoA-DD(PoA8480) section B mentions that each of the CPA under this PoA shall not be greater than the threshold of 180GWth/year. The same was required to be followed for MP1 September 2018 to 31 July 2019

PS for PoA standard released on 28/11/2018, paragraph 124(m) stated that if "the the generic CPA consists solely of units that qualify as "microscale CDM units" as defined in the "Methodological tool: Demonstration of additionality of microscale project activities", the conditions of meeting the micro-scale or small-scale is not required. In case the PP can demonstrate that each of the units included in the CPA qualify as microscale thus it is exempted from the threshold requirement.

PP removed the limit of small scale through PRC-8480-005 in line with the above stated guideline in the PS for PoA. The PRC was approved on 12/03/2020.

After the approval of PRC, the old stoves included in CPA-001 and CPA-002 were kept under these CPAs and the new ones distributed since 06/07/2018 were moved to CPA-003. The dates of distribution, the unique barcodes were checked in all these CPAs and they were found to be mutually exclusive. No repetition of any barcode for any stove was found in the database of these three CPAs (CPA-001, CPA002 and CDM CPA 003). The confirmed period of distribution stated below:

CPA Reference Number	Start date of distribution	End-date of distribution	Total Number of Stoves
VCS- CPA-001	11/01/2010	17/08/2012	11,132
VCS-CPA-002	19/02/2011	25/08/2016	9,527
CDM-CPA-003	06/07/2018	22/07/2018	21,918

Thus, VVB is of the opinion that there was no double counting of the stoves under CDM and VCS for any of the stoves.

Verra Response:

The project proponent clearly explained that the cookstoves that were already accounted for as part of CPA 003 in the CDM were only the new cook stoves from CPA001 and CPA 002, which were distributed after 6 July 2018. As the current monitoring period considers the old cook stoves from CPA001 and CPA002 that were distributed before 6 July 2018, then there is no double counting. Therefore, this finding is closed and no further action is required.

Finding 2

VCS Standard, v4.1 Section 3.18.2 states that when there is a deviation from the project description, the project participant shall include a description of when the changes occurred as well as reasons for the changes.

As a project description deviation, the project proponent states that it switched methodologies, from CDM AMS-II.G Version 3 to VCS VMR0006 Version 01. However, the justification for this switch is missing in the monitoring report/project description and the same has not been assessed by the VVB. The proponent is requested to justify the methodology switch. In addition, the VVB is requested to assess this justification.

Project Proponent Response:

PP followed the instruction of VERRA for switching the applied methodology AMS II.G. to VCS methodology VMR 0006. PP asked clarification from VERRA (on 7 October 2020) that whether, PP can switch to new VERRA methodology during next verification of the project. VERRA confirmed that PP can do it through project description deviation. Therefore, PP applied Project Description Deviation during the current monitoring period to switch the new VERRA methodology VMR 0006.

VVB Response:

PP sought clarification from VERRA for switched from the CDM methodology AMS-II.G. to Verra approved methodology VCS VMR0006 Version 01. VERRA responded to the clarification on 07/10/2020, saying that switch of methodology is allowed. The switch of methodology has been proposed along with this issuance request. Thus, the deviation was accepted by the VVB and is being proposed with this issuance request.

Verra Response:

Given that the change in the applicable methodology was accepted by Verra, this finding is closed and no further action is required.

Finding 3

Section 3.18.2 of the *VCS Standard, v 4.1* states that where a project deviation impacts the applicability of the methodology, additionality or the appropriateness of the baseline scenario, the deviation shall be described and justified in a revised version of the project description.

The original project description as per the VCS document, dated 6 December 2017, Section 3.2 "Project Emissions," states that the emissions shall be calculated based on the formulas included under CDM PoA 8480-0001. Based on Section A.2 of the CPA-DD document referred to by the VCS project description document, the efficiency of ONIL stoves is 24%. However, the revised project description provided as part of the current verification request, the efficiency of the cook stove is 31.67%. The PP/VVB is required to specify and justify which of the two efficiencies is the correct one. Further, the VCS Methodology VMR0006 Version 1, Section 2 requires project stoves to have specified high-power thermal efficiency of at least 25%, thus, the project proponent and VVB are requested to clarify how the applicability conditions of VCS Methodology VMR0006 Version 1 are met.

Project Proponent Response: There were some design changes in existing/new cookstoves to improve utilisation of heat generated during wood burning. The solid insulation was developed to replace the pumice that is actually being used in the ONIL Plancha stove for insulation. The solid insulation has many benefits; it improves the thermal efficiency, improves cooking times which helps save firewood.

Same improvement has been done on all the existing(old) cookstoves. Therefore, PP has revised the thermal efficiency of the cookstoves from 24% to 31.67%. Evidence of the thermal efficiency test conducted on the new/modified cookstoves along with the revised VCS-PD, have been submitted to VVB for further verification.

VVB Response: The thermal efficiency value of the ONIL stove is 31.67%. The value was confirmed from the manufacturer specification. For CPA 3, the CME proposed PRC 8480-0006 to update the thermal efficiency, which was was approved by the board on 12/03/2021. The CME explained that the efficiency has increased because of the changes in the design of the stove. Since, CME was not claiming anything for CPA1 and CPA2, the same PRC was not proposed for these two. However, since the ICSs distributed are of same type, the justification for upgrading the efficiency was found to be same for all the CPAs. The efficiency of the modified model of the stove was 31.67% which is way above the minimum limit of 25% stated in VMR 006. Thus, VVB is of the opinion that the changed efficiency of 31.67% meets the applicability condition of thermal efficiency rating of the applied methodology and the same has already been incorporated in the VCR. The value needed to be CPA1 and CPA2 under VERRA. Thus, the CME has updated the value in the latest version of the PD

Verra Response:

There were some design changes in existing/new cookstoves to improve utilisation of heat generated during wood burning. The solid insulation was developed to replace the pumice that is actually being used in the ONIL Plancha stove for insulation. The solid insulation has many benefits; it improves the thermal efficiency, improves cooking times which helps save firewood.

Same improvement has been done on all the existing(old) cookstoves. Therefore, PP has revised the thermal efficiency of the cookstoves from 24% to 31.67%. Evidence of the thermal efficiency test conducted on the new/modified cookstoves along with the revised VCS-PD, have been submitted to VVB for further verification.

The finding is closed for this verification period, however, the VVB is required to provide a revised verification report raising a forward action request (FAR) requiring a material verification of the improvements made to the cookstoves, and how the project proponent can ensure an efficiency of 31.67% even for the older stoves. In doing so, the VVB is requested to verify the project deviations in line with all the VCS Standard requirements and submit the revised project description document, if deemed necessary.

Finding 4

VCS Standard, v4.1 Section 3.18.2 states that when there is a deviation from the project description, the project participant shall include a description of when the changes occurred as well as the reasons for the changes.

Regarding the switch in methodologies, the project proponent and VVB mention that there is no negative impact on the conservativeness of GHG emission reduction quantification as a result of the deviation. However, the methodology switch changed the default value for the emission factor applied, increasing from 81.6 tCO_2/TJ (value applied during the preceding VCS monitoring period, 1 Aug 2017 to 31 July 2018) to the CO_2 emission factor of 112 tCO_2/TJ plus the non-CO_2 emission factor of 26.23 tCO_2/TJ, which sums up to 138.23 tCO_2/TJ.

Given this change in emission factors and resulting impacts on the emission reductions quantification, the project proponent and VVB are requested to clarify how the methodology switch does not impact the conservativeness and the accuracy of emission reduction quantification.

Project Proponent Response:

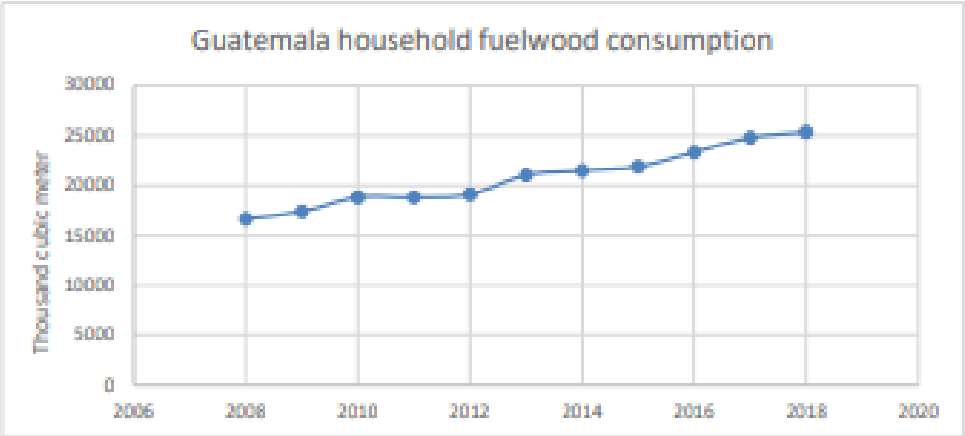
PP followed the instruction of VERRA for switching the applied methodology AMS II.G. to VCS methodology VMR 0006. PP asked clarification from VERRA (on 7 October 2020) that whether, PP can switch to new VERRA methodology during next verification of the project. VERRA confirmed that PP can do it through project description deviation. Therefore, PP applied Project Description Deviation during the current monitoring period to switch the new VERRA methodology VMR 0006.

VCS Standard, v4.1 Section 3.18.2 states that when there is a deviation from the project description, the project participant shall include a description of when the changes occurred as well as the reasons for the changes.

Regarding the switch in methodologies, the project proponent and VVB mention that there is no negative impact on the conservativeness of GHG emission reduction quantification as a result of the deviation and this is as per Section 3.17.2 of VCS Standard, v4.1. However, the methodology switch changed the default value for the emission factor applied, increasing from 81.6 tCO2/TJ (value applied during the preceding VCS monitoring period, 1 Aug 2017 to 31 July 2018) to the CO2 emission factor of 112 tCO2/TJ plus the non-CO2 emission factor of 26.23 tCO2/TJ, which sums up to 138.23 tCO2/TJ.

The default emission factor applied during the preceding VCS monitoring period considers a mix of

present and future fuels used in households. Thus a 50% weight is assigned to coal as the alternative solid fossil fuel (96 tCO2/TJ) and a 25% weight is assigned to both liquid and gaseous fuels (71.5 tCO2/TJ for Kerosene and 63.0 tCO2/TJ for Liquefied Petroleum Gas (LPG) arriving at the 81.6 t CO2/TJ value. However, this value assumes a hypothetical situation of fuel mix use and is not representative of ground situation.



Compiled from UNdata | record view | Fuelwood

In reality, the fuelwood consumption in Guatemala has been increasing steadily at an average rate of 4.3% in the past 10 years. The high consumption values stem from the fact that a considerable percentage of rural population in Guatemala depend on wood fuel for meeting their cooking needs. The number stood at a high of 83% according to the last DHS conducted in the year 2014-15.

Over the years several World Bank reports have reported the dominance of wood in rural Guatemalan households- “About 20 million people use fuelwood for cooking in the region, of which roughly 86% of people live in three countries (Guatemala, Honduras and Nicaragua) and the remaining 14% of them live in El Salvador, Costa Rica and Panama”

A baseline study carried out in recent past by the project proponent further validated this fact as the study found 31% of respondents to be cooking their meals on three stone fire while 69% relied on some other conventional system sans any improved combustion air supply or flue gas ventilation technology with wood being the primary fuel. Moreover, the target population selected for the project activity are exclusively wood fuel using households, it is therefore only fair to consider wood emission factor of 112 tCO2/TJ being more appropriate than the previously used value of 81.6 t CO2/TJ for calculating emission reduction as it corroborates with the ground reality. Please note that the CDM methodology was obliged to construct a non-wood baselines for policy reasons arising from negotiations on the Kyoto Protocol which could not admit to support for avoiding deforestation. Hence IPCC default factors for wood-burning for cooking in were replaced with an assumed combination of LPG, Kerosene, and coal. Gold Standard adopted the legitimate IPCC default value many years ago and Verra adopted this in 2020.

It is also a well-known fact that wood fuel causes CO2, N2O and CH4 emissions in addition to soot, black carbon and volatile compounds. The methodology used in the preceding monitoring period did not account for non-CO2 emissions. The present methodology, however, allows for both CO2 and Non-CO2 emissions to be accounted in calculating emission reduction, again using conservative IPCC default factors.. This allows to calculate more accurately the total amount of actual emissions which are being avoided by the project stoves.

Looking at the above explanation, the project proponent deems fit to use the wood emission factor instead of hypothetical fuel mix since it represents the actual ground condition and estimates the avoided emission as sum of CO2, N2O and CH4 emissions since a wood fuel stove is known to emit all three GHGs and not just CO2.

PP just followed the applied VERRA methodology VMR 0006 and applied the default values of the parameters applicable as per the VERRA methodology. PP would like to point out that there is no comparison possible between previous methodology AMS-II.G. and new VERRA methodology.

There is no deviation from the applied VERRA methodology during this verification. Hence, conservativeness and accuracy of emission reduction quantification is exactly in accordance with the newly applied methodology and can't be compared with previous CDM methodology AMS-II.G.

VVB Response:

The switch in the methodology from CDM AMS-II.G to VCS VMR0006 was allowed by Verra upon seeking clarification to conduct the change under project description deviation under next verification. Thereby the change of methodology from CDM approved to VCS approved was found to be acceptable. All the new applicability conditions were demonstrated by the CME and all parameters have been determined in line with the new applied methodology VMR0006.

The value of emission factor changed substantially after the switch of methodology. The value increased from 81.6 tCO2/TJ to the CO2 emission factor of 112 tCO2/TJ plus the non-CO2 emission factor of 26.23 tCO2/TJ, which sums up to 138.23 tCO2/TJ.

CDM methodology AMS II.G. version 3.0, footnote 9 indeed derives the value of 81.6% from the assumption that 50% weight is assigned to coal (96 tCO2/TJ) and a 25% weight is assigned to both liquid and gaseous fuels (71.5 tCO2/TJ for Kerosene and 63.0 tCO2/TJ for Liquefied Petroleum Gas (LPG). However, it is highly conservative assumption which is not true for all the countries in the world in reality.

The PP had conducted a baseline study survey to understand the end user cooking practices, including the fuel type. The survey revealed that the households rely majorly on wood fuel for cooking their meals. Following published report support the result of PP's baseline survey:

a) The DHS study in Guatemala states that 83% of people rely on wood fuel for cooking.

b) Recent UN fuel wood consumption data for Guatemala available confirms that the % of fuel wood consumption in Guatemala is increasing steadily at a rate of 4.1%

c) The world Bank document titled "household cooking Fuel choice and adoption of improved cookstoves in developing countries." States that 86% of people living in Guatemala, Honduras and Nicaragua rely on fuel wood.

The new applied methodology was found to be more accurate as it takes under consideration CO2, N2O and CH4 emissions and thus applying both emission factor for both CO2 and Non-CO2 emissions.

In VVB's opinion, the application of default EF values for both CO2 and Non-CO2 emissions were found to be appropriate as this considered the actual scenario prevailing in Guatemala. Also, the switch in the methodology led to consideration of the default values stated in the new methodology. Thus, the approach followed by PP was found to be correct and appropriate.

Verra Response:

The project proponent explained that the baseline emission factor applied better represents what is actually happening on the ground, which was further verified by the VVB. Therefore, this finding is closed, and no further action is required.

2. MINOR FINDINGS

Finding 1

Based on Section 4.5 of the *VCS Registration and Issuance Process, v 4.0*, in order to require periodic VCU issuance, the project proponent shall provide an issuance representation (among other representations). And per Section 4.2.5, the Verra website makes available all the templates, including the one for issuance representations.

Verra notes that the project proponent used version 3.5 of the *Issuance Representation Template*. The latest template available is version 4.1.

The project proponent is requested to use the current version of the issuance representation template.

3. ASSESSMENT CONCLUSION

On 16 July 2021, Verra conducted a review of the verification approval request for project ID 1721, *ONIL Stoves —Guatemala – Uspantán*, the results of which can be found above. The project review report was sent to Earthood Services Private Limited with four assessment findings, one minor finding. On 21 August 2021, Verra received responses to the findings above. The responses were sufficient to close all findings, however, the VVB was required to raise a FAR to further check the project before the next verification request.

On 03 September 2021, Verra closed all assessment findings and a FAR is required to be taken into account by the VVB before the next verification request.

.