VERRA REVIEW FINDINGS REPORT

This report includes findings identified during Verra's post-registration review of the below-mentioned project. The review was conducted pursuant to Section 6 of the *VCS Registration and Issuance Process*.

The VVB must:

1. Address the findings and provide responses in this report for Verra's review.
2. Attach supporting documentation as needed.

Confidential information may be provided as separate attachments and should be clearly designated as such.

This report may be shared with the relevant accreditation body.

Project and Relevant Assessment(s)	2372, Installation of high efficiency wood burning cookstoves in Malawi - Project 2 VCS Verification Report Issued on 21/09/2022 for MP02: 16/04/2021 – 15/10/2021
Verra Program(s)	Verified Carbon Standard (VCS) Program
VVB	Earthood Services Pvt Ltd
Lead Contact	Kaviraj Singh
Contact Information	info@earthood.in operations@earthood.in
References	*VCS Standard, v4.7; VCS Program Guide, v3.7;* ISO 14064

Date of First Issue	29 July 2024
Due Date for Responses	16th August 2024
Review Conclusion	Closed
Date of Final Issue	15 October 2024

FINDINGS

Finding 1 - Lack of clarity on the determination of $B_{y=1,new,i,j,survey}$, (Annual quantity of woody biomass

used by improved cookstoves in tonnes per device of type i and batch j) and accuracy of the value applied.

Issues

1. The on-ground monitoring raw data has not been cross-checked to verify the value of $B_{y=1,new,i,j,survey}$ against on-ground monitoring raw data, which is necessary to confirm the absence of data inaccuracies and inconsistencies.
2. According to the registered project description (PD) and monitoring report (MR), the parameter '$B_{y=1,new,i,j,survey}$', is determined *ex-post* after one year of stove operation and fixed for the rest of the crediting period. However, the monitoring report(s) does not transparently outline the process and methods used to determine this value
3. The MR and verification report (VR) do not provide information about whether the survey conducted meets the statistical requirements of 90/10 or 95/10 confidence and precision, and whether it is representative of different types of cookstoves distributed/strata, as per the Standard for Sampling and surveys for CDM project activities and programmes of activities.
4. Section 4.2 of the MR states that this parameter was determined through sample survey based on questionnaires or interviews]. However, the VVB has not assessed whether the monitoring procedures applied align with VMR006, v1.1 and how the conditions specified under '$B_{y=1,new,i,j,survey}$' parameter table (refer page 17-18 of VMR0006, v1.1) were satisfied.

Action Required

1. The VVB must cross-check the value used in ~~E~~mission ~~R~~eduction and ~~R~~emovals (ERR) calculations with the on-ground monitoring raw data to confirm the accuracy of the value.
2. The VVB must assess how the $B_{y=1,new,i,j,survey}$ value applied for monitoring period(s) is accurate, consistent and credible for monitoring period(s) under review.
3. The VVB must assess whether the survey, process and methods to determine $B_{y=1,new,i,j,survey}$ for new instances added in the monitoring period are transparent and align with VMR0006, v1.1 and the latest version of the CDM Standard for sampling and surveys for CDM project activities and programme of activities.
4. The VVB must use objective evidence to independently assess information provided by the project proponent related to the value applied and ensure that the monitoring report and verification report are updated to include this evidence and assessment.

Program Rule(s)

VCS Standard v4.7, section 3.16.1 -3.16.5.

Background

Refer Annexure I

VVB Response

1. As per registered PDD and applied methodology, the value of the parameter '$B_{y=1,new,i,j,survey}$' is determined in the first year of project implementation. This is the second monitoring period of the project activity covering the period from 16th April 2021 to 15th October 2021. VVB confirms that the

value of the parameter $B_{y=1,new,l,j,survey}$ has been revised by the PP for the current monitoring period from 1.3359 tonnes/device/year to 0.83147 tonnes/device/year.
During the 1st MP, two stoves of the same model were distributed in each household and the average firewood consumption from these stoves were accounted for during the calculation of the parameter. The value reported in the operation survey sheet is 2.278 kg/day. VVB has reviewed the data from the 1st MP and the approach is deemed acceptable. The calculation method for the emission reductions is in line with the applied methodology and registered project design, i.e.

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

The new data and calculation are consistently reported in the revised MR and ER sheet. Since the new data provided is extracted directly from the operations record of the organization, i.e. the data initially submitted by ground staff team based on records from site measurements, the information is found credible.
The credibility of the on-ground operations data is confirmed by the VVB from the declaration letter provided by the PP dated 22/09/2024, issued by Milbank LLB, an international law firm assisting PP in the investigation of matters related to the misstatement of carbon credits. This declaration endorses the accuracy and completeness of the $b_{y,new}$ data provided by the PP's operations team i.e. the original data recorded by the on-ground team during their survey.

2. VVB confirms that the process used to determine the value of the parameter '$B_{y=1,new,i,j,survey}$' has now been transparently outlined in the section 4.2 of the MR. In accordance with the applied methodology VMR0006 v1.1, the survey distinguished the quantity of firewood used by each project device, given that two devices were distributed per household. The measurement campaign is conducted with the help of weighing scales which are used to measure the weight of wood bundles. The details of the method applied are provided in the monitoring report. The determined method is found to be in line with the page no. 17-18 of the applied methodology, VMR0006 v1.1. VVB confirms that the ERR calculation is accurate and consistent across all the project documents. The values of the fixed parameters are aligned with those in the registered VCS PD. The parameter '$B_{y=1,new,l,j,survey}$' has been accurately calculated using the on-ground monitoring survey data and is consistently reported in both the MR and the ER calculation sheet. The verification report has been revised accordingly.
3. The VVB has thoroughly reviewed the survey methodology, sample size calculations, and data collection processes employed by the PP to determine the parameter $B_{y=1,new,i,j,survey}$. The following points summarize the VVB's assessment:
    - **Survey Representativeness:** The survey methodology was designed to ensure representativeness across different types of cookstoves distributed and across geographical strata. Specifically, the survey covered households using the TLC-CQC Rocket Stoves (Project Stove 1 and Project Stove 2) and considered variations in firewood consumption. The survey required users to create separate piles of firewood for each stove, including any baseline stoves in use. This approach ensured that firewood consumption by each device could be distinctly identified and measured.
      The VVB confirms that the sampling plan was implemented in accordance with the latest version of the CDM Standard for Sampling and Surveys and the VMR0006, v1.1 methodology. The survey results were designed to cover the entire population of distributed cookstoves with a calculated sample size ensuring a 90% confidence level and 10% precision, as per the requirements.

- **Sample Size and Calculation:** The sample size for parameters $B_{y=1,new,l,j,survey}$ (quantity of woody biomass used by improved cookstoves) was determined using conservative assumptions and the equations provided in the methodology. For $B_{y=1,new,l,j,survey}$, the sample size was determined as 68, (136 Surveyed) based on assumptions for the mean and standard deviation.
- **Alignment with VMR0006 v1.1**: The VVB confirms that the survey processes and methods used to determine $B_{y=1,new,l,j,survey}$ were transparent and adhered to the requirements set out in VMR0006 v1.1 and the CDM Standard for Sampling and Surveys.
- The data collection process was documented in the MR and/ or ER sheet, including the calibration of weighing scales, and the procedures for data accuracy and precision checks. The monitoring survey included visual inspections, verification of stove use, and random checks of household data, all of which contributed to the credibility of the survey results.

Based on the comprehensive review of the monitoring survey methodology, sample size calculation, and data collection processes, the VVB concludes that the survey is representative of the types of cookstoves distributed and geographical strata. The process and methods used to determine $B_{y=1,new,l,j,survey}$ are transparent and align with VMR0006 v1.1 and the CDM Standard for Sampling and Surveys. Therefore, the approach taken by the PP is deemed acceptable.

4. The value reported in the on-ground survey sheet is based on the amount of firewood consumption by the stoves present in the household. During the monitoring period, there were two stoves of the same model distributed in each household, and the average firewood consumption from these stoves was accounted for during the calculation of the parameter. The value reported in the operation survey sheet is 2.278 kg/day. In line with the applied methodology VMR0006 v1.1, the survey distinguished the quantity of firewood used by each of the project devices, as two devices were distributed in each household (VMR0006 v1.1, page 17-18,). The VVB has reviewed the data from this monitoring period, and the approach is deemed acceptable by the VVB since it aligns with the applied methodology.
    - The new data provided is the direct on-ground data obtained by the operations team of the PP. The raw data, which was downloaded from the application in which the information was initially recorded, has been provided. The monitoring survey data points were directly recorded in a monitoring application by the PP, ensuring reliability of this data.
    - An assessment of the data reflected that the values obtained are lower than the previously verified values for this parameter, resulting in a claim of lower emission reductions compared to those previously claimed. This conservative approach ensures that the values do not overestimate the emission reductions.
    - The change in the value of this parameter is a result of applying a more conservative approach to meet the required precision. The approach applied by the PP in measuring this parameter was re-checked by the VVB, and no discrepancies were found.
    - The applied monitoring procedures and sample size calculation were designed to achieve a precision rate of 10% at a 90% confidence level, as required by the VMR0006 v1.1. The average value of 2.278 kg/day was used, which achieved the required precision of 10% and comply with the requirements of CDM sampling standard. This conservative adjustment ensures that the parameter values are within the acceptable range and meet the methodology's requirements.
    - The VVB reviewed objective evidence to ensure that procedures for determining this parameter are in line with the methodology. This includes evaluating the competence of the

monitoring staff, reviewing Standard Operating Procedures for monitoring, and confirming the calibration of monitoring equipment. These procedures confirm that the monitoring activities were conducted in accordance with the required standards and that the data collected is reliable

The VVB has revised the Verification Report and to address the issues raised by Verra. The revised MR has been reviewed by the VVB, and the corrections are deemed acceptable, subject to the revisions made in the first monitoring period of this project.

Verra Response

The VBB has reviewed the documentation and submissions from the PP on the monitoring tests undertaken to determine the '$B_{y=1,new,i,j,survey}$' during the first monitoring period. The VVB acknowledges that at the time of the verification, there was material information, which was not made available to the VVB, that had an impact on the overall emission reductions by the project for the monitoring period for MP02: 16/04/2021 – 15/10/2021.

The VVB has reviewed the material information presented by the PP including a duly signed letter (dated 01/10/2024) from their attorneys who acted as counsel to the PP in an investigation of matters related to the misstatement of carbon credits in projects C-Quest submitted to Verra. The letter states that, *"Based on our investigation and review of the analysis conducted by C-Quest for the purposes of the Section 6.1 process, we have conveyed to the Authorities that the by.new data reflected in the Spreadsheets represents accurate updated by.new data."* Based on the new information, the $B_{y=1,new,i,j\ survey}$ value has been updated, and it is conservative as compared to the value applied in calculation of emission reductions claimed for the project. The verifying VVB for Monitoring Period 1 has also reviewed the revised data and confirmed that the updated value of 0.83147 is conservative and appropriate as compared to the value ORIGINALLY applied to the project.

Since the value is determined during the first verification and fixed for the entire crediting period, the verifying VVB of MP1 has applied the updated value and fixed it for the entire crediting period i.e. 05/07/2020 to 04/07/2030 (10 years fixed).

The VVB for the current MP has also checked the same data and confirmed it to be correct. VVB has confirmed that the monitoring survey adheres to robust statistical analysis and is conservatively established.
Based on the VVB assessment, the monitoring report and verification report have been revised, and the ERR adjusted to reflect the correct amount due for the monitoring period(s) under review. The issue is closed.

Finding 2 – Determination of the proportion of installed cookstoves operating within the period not transparent

Issues

1. The proportion of operational cookstoves within the monitoring period(s) is reported to be 100% This is likely unrealistic, given the minimal probability of 100% stove operation without breakages and abandonment over their lifetime. The project documentation does not transparently provide the measures put in place for on-time stove maintenance support for repairs and replacement.
2. The verification report does not provide a sufficiently detailed assessment of how the proportion of operational cookstoves was verified with cross-checking of on-ground monitoring raw data
3. The monitoring report(s) does not provide sufficient information on how the samples for determining stoves in operation were selected and the sampling process used.

Action Required

1. The VVB must assess and confirm the completeness, conservativeness and accuracy of the corrective MRV practices and sampling procedures related to determining the proportion of operational cookstoves within the monitoring period(s) under review.
2. The VVB must cross-check the value(s) used in ERR calculations with the on-ground monitoring raw data, project database, sales record and maintenance/repair logbook to confirm the accuracy and consistency of the value.
3. The VVB must use objective evidence to independently assess information provided by the project proponent related to the value applied and ensure that the monitoring report and verification report are updated to include this corrective method, evidence and assessment.

Program Rule(s)

VCS Standard, v4.7, Sections 3.16.3 - 3.16.5

Background

Refer Annexure I

VVB Response

1. The VVB has assessed the corrective MRV practices and sampling procedures related to determining the proportion of operational cookstoves, and the details are discussed below:
   i. The initial monitoring surveys resulted in 100% operationality which was cross verified at the time through acceptance sampling by VVB. Since all sampled households by VVB were operational, the operationality rate was accepted.
   ii. However, internal investigations by PP management revealed new information regarding the monitoring surveys which indicated issues with the monitoring practices which could potentially result in the monitoring survey showing higher operationality rate than actual in target sampled population (through cherry picking of households). This approach was a result of introducing biasness in the trainings that were conducted for the monitoring survey staff, who was informally trained to apply such practices which could compromise the representativeness of the survey results.
   iii. Due to the unreliability of the monitoring survey data, the resulting 100% operationality rate has now been discarded. As an alternative for this parameter, results of the stove champion

program has been considered. The suitability of using this data has been further discussed below.

iv. Stove champion program- Stoves champions program is an internal quality control program conducted by the PP, where personnel from the different areas of the project region are appointed to check, train and help the locals for the use of the ICS distributed in the area. Training material and training records of the stove champions has been provided, and PP has confirmed that detailed and thorough trainings have been provided to the persons at the frequency of once a year and hence, the data collected is more accurate and reliable. It is noted and confirmed that the stove champion surveys and trainings are separate activity from monitoring surveys and trainings.

v. For this project, the stove champion data reflected that 56,748 number of samples were covered during the period 16/09/2022 to 28/02/2023 (this duration falls under MP5 of the PA as specified in the MR). The survey recorded information regarding the operationality of the stoves and it reflected that 96.09% of stoves were operational during this period. The stove champion follow-up surveys are a continuous process. The dates of the surveys were confirmed from the survey database extracted by PP from their app-based system.

vi. The confidence precision calculations of the data recorded from stove champion program were reviewed. The precision obtained from the results is 0.13%. and hence, the results were found to be within 10% precision, which is the requirement for the parameter being discussed.

vii. Since this data was recorded by a trained staff and the operationality of stoves was regularly recorded, adding to the fact that the data meets the required precision, the stove champion data is found reliable.

viii. Additionally, the value obtained from stove champion program was further cross-checked against the similar projects in the host country Malawi across different registries and the average stove operationality rate is found to be 87.10%. This data was provided by the PP in the form of a secondary database which was reviewed by the VVB. The projects listed in the database were cross-checked by the VVB from their respective registries and the operational rates mentioned in the database were found to be consistently reported. Details of the referred projects are as follows:

- https://registry.verra.org/app/projectDetail/VCS/3262 - The project is implemented in the same host country and the distributed technologies are also similar (clay made Chitetezo Mbaula (CM) cookstove, similar to the clay-made stoves under the 2886 project) with the same fuel type i.e., firewood. The operationality reported for this project activity is 88% for a similar vintage.
- CDM Project 9933 (MP1-MP3): (https://cdm.unfccc.int/Projects/DB/TUEV-SUED1397540352.85/iProcess/TUEV-SUED1446720897.2/view) – The project is implemented in the same host country. Although a specific region within the host country has been targeted in this project (unlike 2886 project which targets the entire host country), a similar project technology i.e. improved firewood cookstoves constructed with locally available clay has been implemented, thus indicating likely a similar usage pattern in the rural communities. The operationality rates for the three MPs reported in the MRs were 93.89%, 97.78% and 96.67% for MP1, MP2 and MP3 respectively.
- CDM Project 9935 (MP1-MP2): (https://cdm.unfccc.int/Projects/DB/TUEV-SUED1397642432.04/iProcess/TUEV-SUED1446721135.84/view) - The project is implemented in the same host country. Although a specific region within the host

country has been targeted in this project (unlike 2886 project which targets the entire host country), a similar project technology i.e. improved firewood cookstoves constructed with locally available clay has been implemented, thus indicating likely a similar usage pattern in the rural communities.. The operationality rates for the two MPs reported in the MRs were 92.22% and 86.67% for MP1 and MP2 respectively.

- https://registry.goldstandard.org/projects/details/3915 - The technology implemented in the project activity is improved firewood stove and the location is Balaka district of Malawi. The project also implements Chitetezo Mbaula (CM) cookstoves which are constructed with locally available clay and materials. The operationality of the stoves is reported to be 100% during the 1st MP.
- CDM PoA 10182 – https://cdm.unfccc.int/PoAIssuance/iss_db/poaiss785917268/view - The CPAs implemented under this PoA include distribution of improved firewood stoves in different regions of Malawi and the operationality rates reported in their respective MRs range between 79-85% with discount factors applicable during a few monitoring periods as confirmed by the VVB from the CDM webpage for the CPAs (https://cdm.unfccc.int/PoAIssuance/iss_db/poaiss439095172/view, https://cdm.unfccc.int/PoAIssuance/iss_db/poaiss644546618/view, https://cdm.unfccc.int/PoAIssuance/iss_db/poaiss337508536/view)

The above assessment covers various districts and regions in the host country, indicating a reasonable representation of the usage pattern. Therefore, the approach to take an average value of the operationality rate in first monitoring period of the projects has been accepted in absence of credible monitoring survey results. After reviewing these projects, it was confirmed by the VVB that the value reported in the MR i.e. 87.10% for the project VCS 2886 is found to be conservative given that the same host country and similar technology implemented. Therefore, the revised value is found to be acceptable and in line with these revisions, the ER sheet is found to be updated appropriately. The changes are reflected and assessed in the revised verification report.

2. The proportion of operational cookstoves was initially monitored through annual monitoring surveys by the project developer. The verification team cross-checked this parameter by applying acceptance sampling across the monitored samples database. Since all stoves were found operational during the acceptance sampling and the site observations were consistent with the monitoring data, the monitoring survey records were accepted. However, internal investigations by PP's management revealed new information as discussed above, thus compromising the representativeness of the monitoring survey. Therefore, the results from monitoring surveys are now discarded. As an alternative, the data from stove champion program was used, details of which are discussed in the point above. Training material and training records of the stove champions have been provided, and PP has confirmed that detailed and thorough training has been provided to the persons and hence, the data collected is more accurate and reliable. The stove champion data was also cross-checked against the project database to conclude that all stoves covered under the stove champion surveys were indeed part of the project. PP did not maintain a maintenance record of the stoves and therefore, the follow-up surveys data was used for determining this parameter. However, it is also noted that the grievance addressal procedure has been designed, developed and is being implemented by PP to handle concerns that may occur throughout project design and implementation, which was confirmed during

the initial site visit by assessment team through remote interviews and grievance registers, as confirmed in the FVR.

The verification report is now revised to demonstrate the alternative method used. The new results provided in the MR and ER sheet were cross-checked with on-ground survey records from stove champion program. The verification report now further details the compliance with required confidence and precision of survey results. The sampling approach applied by the PP is in line with the registered VCS-PD where the reliability levels were set at 90% confidence and 10% precision as per VMR0006, version 1.1. The achieved precision level for the parameter is 0.13% as confirmed by the VVB from the reliability calculation sheet provided by the PP.

The stove champion data was also cross-checked against the project database to conclude that all stoves covered under the stove champion surveys were indeed part of the project. Accuracy and consistency of this value was confirmed through the stove champion raw data, project sales database and precision calculation of the survey results, as discussed above and detailed in the verification report. However, the value obtained from stove champion program was further cross-checked against the similar projects in the host country Malawi across different registries and the average stove operationality rate is found to be 87.10%. Based on the principle of conservativeness, the lowest value of the parameter obtained from sources discussed above has been determined as 87.10%.

3. The PP has provided new information according to which the method for determining samples for monitoring surveys was compromised, which included cherry picking the sample households by keeping a large amount of buffer samples and during the survey, not recording the responses of the households which reflected non-operationality of the project stoves. Therefore, the results from this samples selection and survey have been discarded. The Monitoring report is now revised providing new information and details regarding the alternative method used.

   VVB has utilized follow-up survey conducted by stove champions, stove champion training evidence, cross-checked from other registered projects in the same region in the host country, to verify the appropriateness and conservativeness of the values applied by the PP, as discussed in above points. Additionally, interviews were conducted with the PPs management regarding the original monitoring surveys and stove champion program to evaluate and assess the approach. All evidence provided reflect that the follow-up surveys are conducted by a team trained separately from the monitoring survey staff and provide a more reliable data source for the parameter documenting operationality of the stoves, based on further cross-check with similar projects and a reasonable capping of the value, if required. In addition to the projects mentioned point no. 1(h) above, VVB has independently reviewed registered projects of the same host country – Malawi across different registries. These projects are as follows:]

   - GS5447 GS5382 Energy for Sustainable Development – Malawi 2 (https://platform.sustain-cert.com/public-project/1051)
   - GS11922 GS11677 GS11902 Malawi Biomass Energy Conservation Programme CPA 22 (https://platform.sustain-cert.com/public-project/3169)

   Similar projects in VERRA include VCS 3262 (https://registry.verra.org/app/projectDetail/VCS/3262)

   These projects were referred by the VVB to cross check the value of the parameter reported in the ER sheet and MR with and the average stove operationality rate. The operationality rates reported in most of the projects range between 79-100% during their first initial monitoring periods. Therefore, the value reported for this project during the current monitoring period is found to be well within the range of other similar projects based on review and expertise of the VVB in similar sectoral scopes

which involve distribution of ICS in similar locations. Section 4.4 of the verification report is now revised to demonstrate the alternative method used.

Verra Response

The VVB has re-checked the documentation and submissions from the PP on the revised usage rates of project stoves. The VVB acknowledges that at the time of the verification, there was material information, which was not made available to the VVB, that had an impact on the overall emission reductions by the project for the monitoring period for MP02: 16/04/2021 – 15/10/2021.

The VVB has reviewed the material information presented by the PP and based on the new information, the usage rate determined is lower than the one which was verified initially. The VVB reviewed that the usage rate in the region was 96.09%, a value determined based on the usage rate of stove champion data. The revised value was determined by following sound statistical procedures, whereby sampling was robust and survey findings were also reviewed and found to be reliable.

In addition, the VVB also reviewed other similar cookstove projects within the region and established that they are using an average usage rate of 79-100%.

Based on the two determined usage rates, the VVB has confirmed that the project opted to apply a usage rate of 87.1% during the monitoring period and revised the emission reductions for that period to maintain conservativeness. VVB assessed that the approach is considered conservative and does not lead to overestimating emission reductions, considering the similar project(s) implemented in the region and stove champion data]. The issue is closed.

ANNEXURE I

Background

The VVB must assess the accuracy, conservativeness, relevance, completeness, consistency, and transparency of the information provided by the project proponent, determine whether information/data provided by the project proponent is reliable, credible and complete, and base their findings and conclusions on objective evidence.

To assess the claims and assumptions in the MR, the VVB must not be limited to evidence provided by the project proponent and must describe all steps taken and sources of information used to cross-check the information contained in the MR. In doing so, the VVB must apply the means of verification required by the relevant Verra Standard, CDM accreditation standards and normative ISO documents, and standard auditing techniques, including, but not limited to:

a. Document review involving cross-checks between the information provided in the MR, raw data and information from sources other than those used; if available, the VVB's sectoral or local expertise; and, if necessary, independent background investigations; and
b. Follow-up actions (e.g., on-site inspection and telephone or email interviews), including:
    i. Interviews with relevant stakeholders in the host country, such as personnel with knowledge of the project design and implementation.
    ii. Cross-checks between information provided by interviewed personnel (i.e., by checking sources or other interviews) to ensure that no relevant information has been omitted.