

CORRECTION AND CLARIFICATIONS TO VM0050 ENERGY EFFICIENCY AND FUEL- SWITCH MEASURES IN COOKSTOVES, V1.0

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This document provides clarifications and one correction applicable to VCS methodology *VM0050 Energy Efficiency and Fuel-Switch Measures in Cookstoves, v1.0*. Such clarifications and correction are effective on their issuance date. Project proponents and validation/verification bodies (VVBs) shall apply and interpret *VM0050, v1.0* consistent with the clarifications and correction set out in this document.

These updates will be incorporated into the next issued version of the methodology.

Correction/ Clarification	Description	Section Reference
Clarification 1	Baseline fuel consumption cross-checks	Section 8.1.1 Average Energy Consumption of Baseline Device ($EC_{i,y}$) Section 9.2 Data and Parameters Monitored; table for parameter $BC_{b,i,y}$
Clarification 2	Usage rate caps	Section 9.2 Data and Parameters Monitored; table for parameter $\eta_{j,k,y}$
Clarification 3	Photographic evidence and usage rate	Section 9.2 Data and Parameters Monitored; table for parameter $\eta_{j,k,y}$
Clarification 4	Project stove efficiency and Water Boiling Tests (WBTs)	Section 9.2 Data and Parameters Monitored; table for parameter $\eta_{new,avg,y}$
Clarification 5	Additional guidance on conducting Controlled Cooking Tests (CCTs)	Section 8.1.1.1 Electric Project Devices With Additional Characteristics Affecting Energy Consumption Section 9.1 Data and Parameters Available at

		Validation; table for parameters $SC_{b,i}$ and $SC_{p,j}$
Clarification 6	Reference to equivalent standard male adult values	Section 9.1 Data and Parameters Available at Validation; table for parameters Hh_i and $Hh_{j,k}$
Clarification 7	Accepted sources of data for claiming wood-to-charcoal conversion factor of up to 6:1	Section 9.1 Data and Parameters Available at Validation; table for parameter CF
Clarification 8	Stove condition and use questions	Section 2.3 of Appendix 3: Binding Survey Questionnaire
Correction 1	Baseline reassessment frequency	Section 6.2 Baseline Scenario Survey Requirements 8.1.1 Average Energy Consumption of Baseline Device ($EC_{i,y}$) Section 9.2 Data and Parameters Monitored; table for parameter $BC_{b,i,y}$

1 CLARIFICATION 1

Clarification:

As a cross-check, baseline fuel consumption results must be compared with data from reputable sources, including government publications, peer-reviewed literature, third-party studies, or official data and statistics. The sources must be relevant to the context of the project activity, reflecting baseline cookstove types, types of users, and cooking practices. Where used for cross-checks, these sources must reflect data collected no more than five years ago.

Background:

Cross-checking baseline fuel consumption enables the project proponent to assess the accuracy of the baseline fuel consumption results, and the validation/verification body (VVB) and Verra review team to evaluate their credibility. This helps to identify outliers and mitigate the potential risk of overestimation. This aligns with the Clean Cooking Alliance's Comprehensive Lowered Emissions Assessment and Reporting (CLEAR) Methodology for Cooking Energy Transitions.

2 CLARIFICATION 2

Clarification:

For projects using direct measurement techniques (such as stove use monitors or electricity meters), usage rates are not capped.

For projects employing surveys, the usage rate is capped at 90% where all of the following customer support actions are undertaken across the entire target population and demonstrated at verification:

- 1) Selection of technologies and fuels that fully meet the cooking needs of the target population, demonstrated by citing robust research or conducting an investigation of cooking practices and attitudes
- 2) Implementation of support activities to assist the target population in effectively operating and maintaining their cookstoves. These may include providing materials (print, in-person, or video) on how to operate the cookstove to prepare common local foods, how to troubleshoot common operational issues, and how to make minor repairs (including obtaining necessary replacement parts). All such communications and materials must be provided in local language(s) commonly used in the project area.
- 3) Provision of a commonly used, toll-free communications channel through which the target population can contact the project proponent to access support (e.g., maintenance and repair services)

For projects employing surveys and that do not implement all of these customer support actions across the entire target population, the usage rate is capped at 75%.

Background:

Surveys present an inherent risk of overestimating usage rates and are subject to greater uncertainty compared to direct measurement methods. The cap on usage rates for surveys ensures conservative outcomes while clarifying the requirements for project proponents and VVBs. This aligns with the CLEAR Methodology.

3 CLARIFICATION 3

Clarification:

For usage rate monitoring, the project proponent must collect photographic evidence in the following manner:

Take photographs of the stove(s), its components, and the cooking areas. The physical condition of the stove(s) and the cooking areas will help determine stove functionality and use.

Background:

Usage rate is a critical factor in determining greenhouse gas emission reductions, requiring verifiable evidence to support VVB assessments.

4 CLARIFICATION 4

Clarification:

The project stove efficiency ($\eta_{new,avg,y}$) must be determined using one of the following methods (options 1–3 prescribed in the methodology) and the corresponding documentation must be provided:

- 1) Water Boiling Test campaigns achieving 90/10 confidence and precision levels as per the most recent version of the *CDM Standard for Sampling and Surveys for CDM Project Activities and Programmes of Activities*
- 2) Manufacturer-certified value that is determined via the Water Boiling Test, with the test results made available for validation by a VVB
- 3) Certification from the host country's national standards body or certifying agency based on the Water Boiling Test

For all three options, cookstove efficiency must be determined based on the Water Boiling Test following the most recent version of the *Water Boiling Test Protocol*¹ or equivalent national standard/protocol. While carrying out the tests, the low and high power (not simmer) efficiencies must be used to calculate the average thermal efficiency.

Background:

Consistent use of robust and recognized methods for determining project stove efficiencies is key to ensuring accurate and verifiable outcomes. Manufacturer tests may be subject to bias and require further validation by a VVB to guarantee their reliability.

¹ Clean Cooking Alliance. Most recent version available at: <https://cleancooking.org/research-evidence-learning/standards-testing/protocols/>

5 CLARIFICATION 5

Clarification:

The following requirements must be applied in addition to the *Controlled Cooking Test Protocol*² when conducting Controlled Cooking Tests (CCTs):

- 1) A minimum of 15 CCTs by five different cooks (three repeats per cook) must be conducted per cookstove model.
- 2) The CCTs must be alternated between the baseline and project cookstoves to limit potential bias caused by increased cook efficiency over repeats.

For artisanal cookstoves, at least three randomly selected samples of each cookstove model must be tested.

Background:

CCTs must be designed to provide representative results that accurately reflect cookstove performance. It is critical to reduce any repetition bias. This aligns with the CLEAR Methodology.

6 CLARIFICATION 6

Clarification:

The following values of equivalent standard male adults³ must be applied when determining the parameters Hh_i and $Hh_{j,k}$ (instead of the references provided in Section 9.1 of VM0050, v1.0, parameter table for Hh_i and $Hh_{j,k}$):

Gender and age	Fraction of standard adult
Child 0–14 years	0.5
Female over 14 years	0.8
Male 15–59 years	1.0
Male over 59 years	0.8

² Clean Cooking Alliance. Most recent version available at: <https://cleancooking.org/research-evidence-learning/standards-testing/protocols/>

³ Values from Table 4 in Clean Cooking Alliance (2018). *Kitchen Performance Test version 4.0*. Available at: <https://cleancooking.org/binary-data/DOCUMENT/file/000/000/604-1.pdf>

Background:

The above table has been introduced for transparency and to promote consistency in application across projects using VM0050, v1.0.

7 CLARIFICATION 7

Clarification:

For the wood-to-charcoal conversion factor (CF), in addition to government-approved/endorsed national or regional values, the following source of data is accepted for claiming values of up to six tonnes of dry wood input per tonne of charcoal output:

- Published, peer-reviewed literature specific to the project region and context

Background:

VM0050, v1.0 provides a default value of four tonnes of dry wood input per tonne of charcoal output for the wood-to-charcoal conversion factor. However, project proponents may use a default value of up to six tonnes of dry wood input per tonne of charcoal output where the value is substantiated by government-approved/endorsed national or regional values. This aligns with the CLEAR Methodology.

8 CLARIFICATION 8

Clarification:

Footnote 35 must be read as follows:

³⁵ The project proponent may rephrase the question keeping in mind the objective (i.e., whether or not the project cookstove is in **usable good** condition). Where the project cookstove is not in **usable good** condition, the project proponent must exclude such stoves from the project database for the whole crediting year and subsequent years. The project proponent may include such stoves again on replacing them with new cookstoves of similar efficiency.

Background:

The question associated with footnote 35 is “*If yes, is your stove in good condition?*”. However, the instructions in the footnote refer to the exclusion of project cookstoves that are not in usable condition. This could be confusing as it is a potential discrepancy between the phrasing of the question and the footnote.

9 CORRECTION 1

Correction:

The third paragraph on page 14 should be read as follows:

The initial baseline survey must be performed prior to validation. The project proponent may employ local third-party agencies to carry out the baseline survey. Follow-up baseline surveys must be conducted **at most every five years from the date of the last survey** in control households that do not participate in the project. **The project proponent may conduct additional surveys at any time, including at crediting period renewal.**

Background:

The pace of change of the prevailing situation is typically slow in regions where cookstoves are distributed, meaning that significant differences are unlikely to occur within shorter timeframes than five years. Adopting a five-year reassessment frequency is sufficient to capture such changes while reducing the monitoring burden on project proponents. This aligns with the CLEAR Methodology.