



Comprehensive Lowered Emission Assessment and Reporting (CLEAR) Methodology for Cooking Energy Transitions

Clean Cooking and Climate Consortium (4C)

ETHOS, January 2025
Saturday Plenary



United Nations
Climate Change

CLEAR Methodology for Cooking Energy Transitions

Developed in response to demand from key stakeholders, this new methodology:

- Is intended to become the standard for cookstove projects under Art. 6.2 & 6.4 of the Paris Agreement, and throughout the Voluntary Carbon Market
- Will generate the most realistic emission reductions estimates to date, reduce integrity risks, and increase consistency in the sector

Comprehensive Lowered Emission Assessment and Reporting (CLEAR) Methodology for Cooking Energy Transitions

Developed by the Clean Cooking and Climate Consortium (4C)

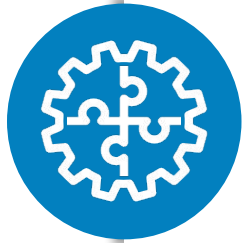


In collaboration with Atmosphere Alternative



In memory of our friend and colleague Gajanana Hegde

What's special about the CLEAR methodology?



First methodology to cover all common cooking transition scenarios



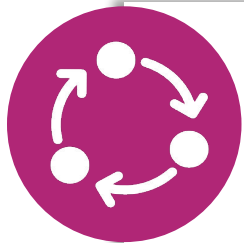
Incorporates the latest science, increasing the requirements for substantiating input parameters



Incentivizes best practices, mandates direct in-home fuel consumption measurement



Incorporates conservative default values, guardrails, and flagged upper bounds



Developed in collaboration with 250+ stakeholders



Revised based on 700+ public comments received during formal consultation

Methodology Contents and Approaches

Quantification of GHG Emission Reductions

Methodology parameters are calculated differently for CTEC and non-CTEC projects and therefore are presented separately in the CLEAR methodology.

CTEC Project

Continuously measures fuel or energy consumption directly on all project technologies, in all project households.

Using built-in or external data loggers (also known as metering), including for electric cookstoves, LPG, ethanol, and biogas, or through fuel sales records.

Non-CTEC Project

Does NOT track all project cookstoves through energy consumption data loggers or fuel sales records.

Quantification of GHG Emission Reductions

Non-CTEC:

$$\text{Emissions reductions for the project during year } y = \left(\text{Baseline emissions during year } y - \text{Project emissions during year } y \right) \times \left(\text{Adjustment to account for the Hawthorne Effect} \right) \times \left(1 - \text{\% deduction to account for leakage during year } y \right)$$

CTEC:

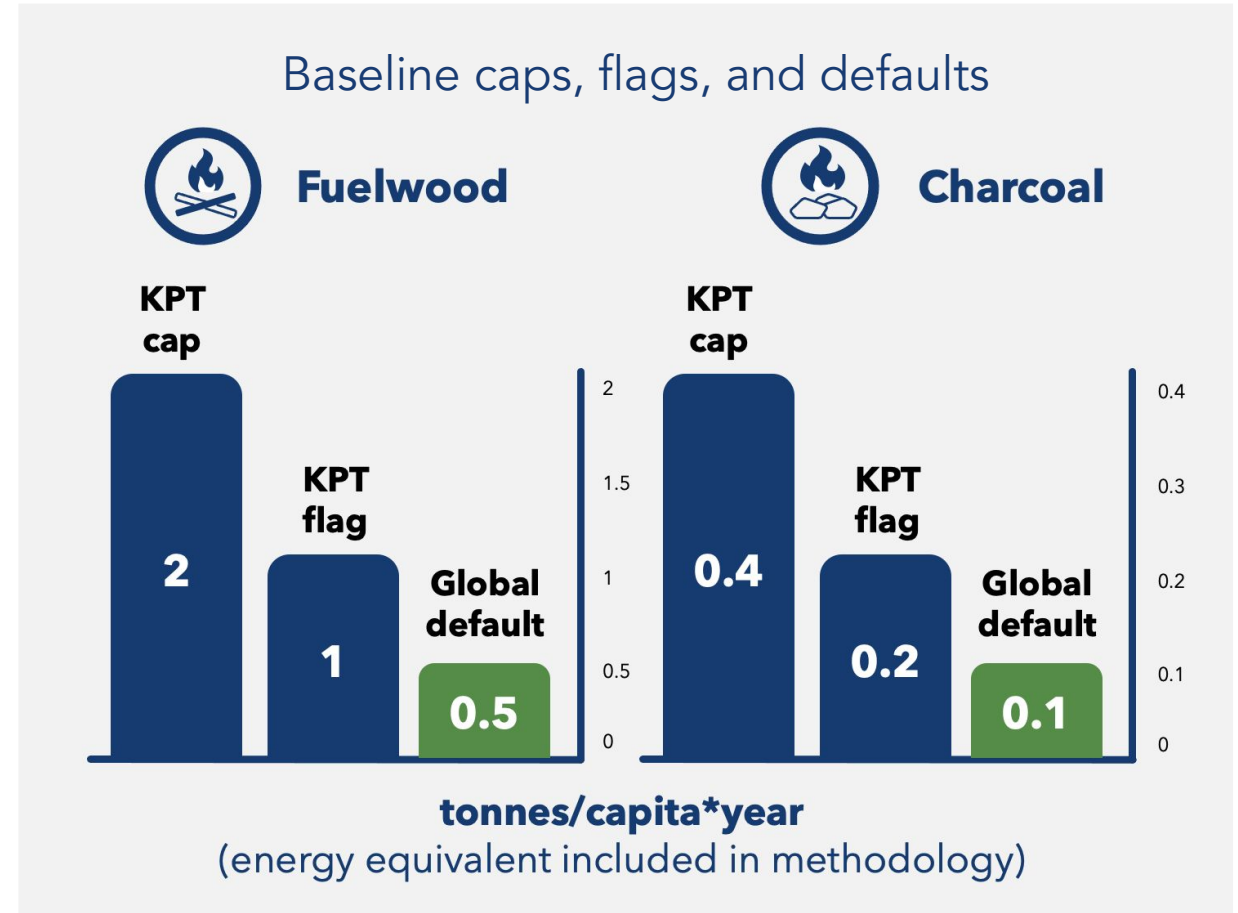
$$\text{Emissions reductions for the project during year } y = \left(\text{Baseline emissions during year } y - \text{Project emissions during year } y \right) \times \left(1 - \text{\% deduction to account for leakage during year } y \right)$$

Use, Adoption, Stacking and Fuel Consumption

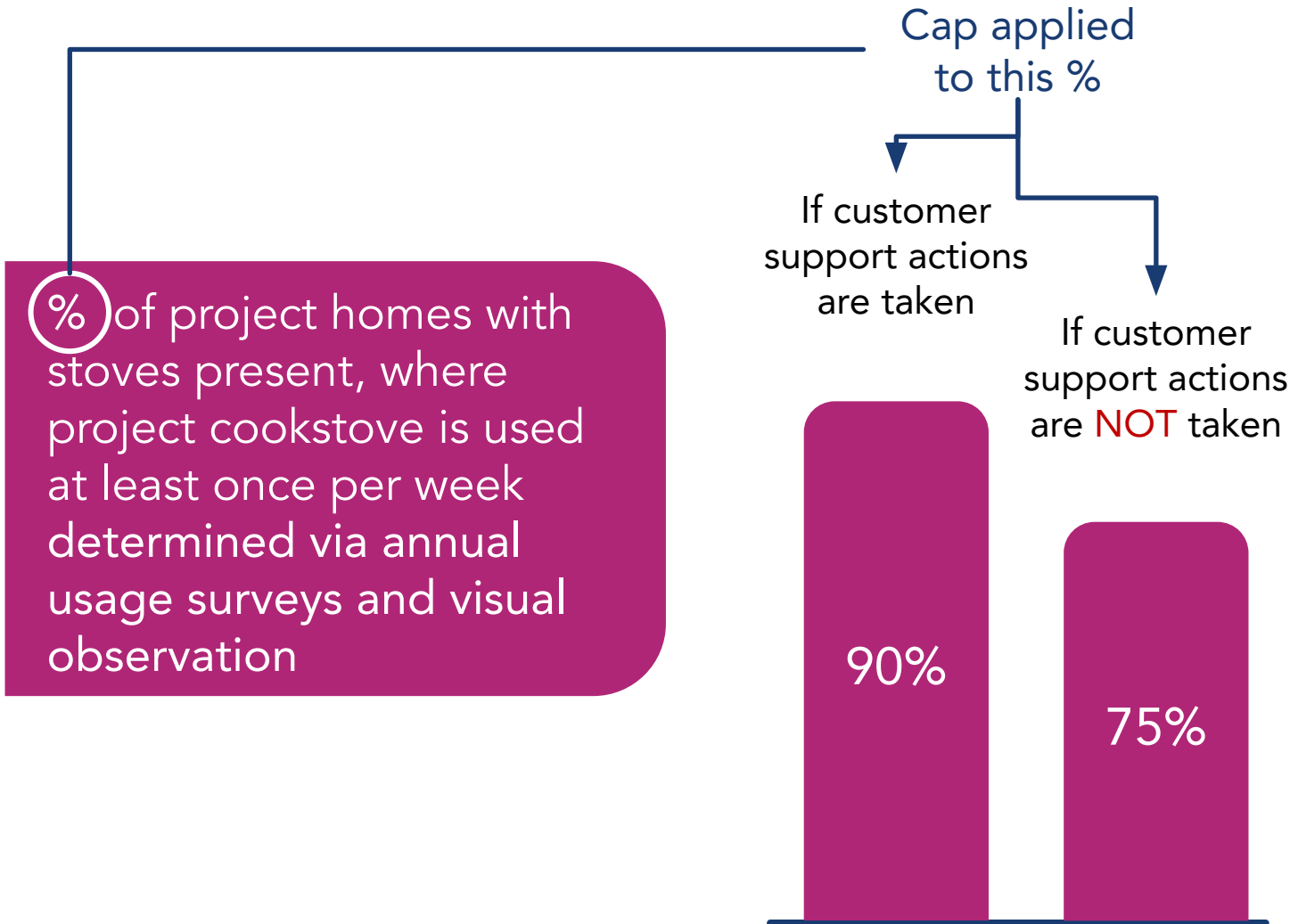
Non-CTEC Projects


Fuel consumption: Non-CTEC options

Option 1	Option 2
<i>Baseline fuel consumption</i>	<i>Baseline fuel consumption</i>
Baseline KPT	Global default
<i>Project fuel consumption</i>	<i>Project fuel consumption</i>
Project KPT	Project KPT



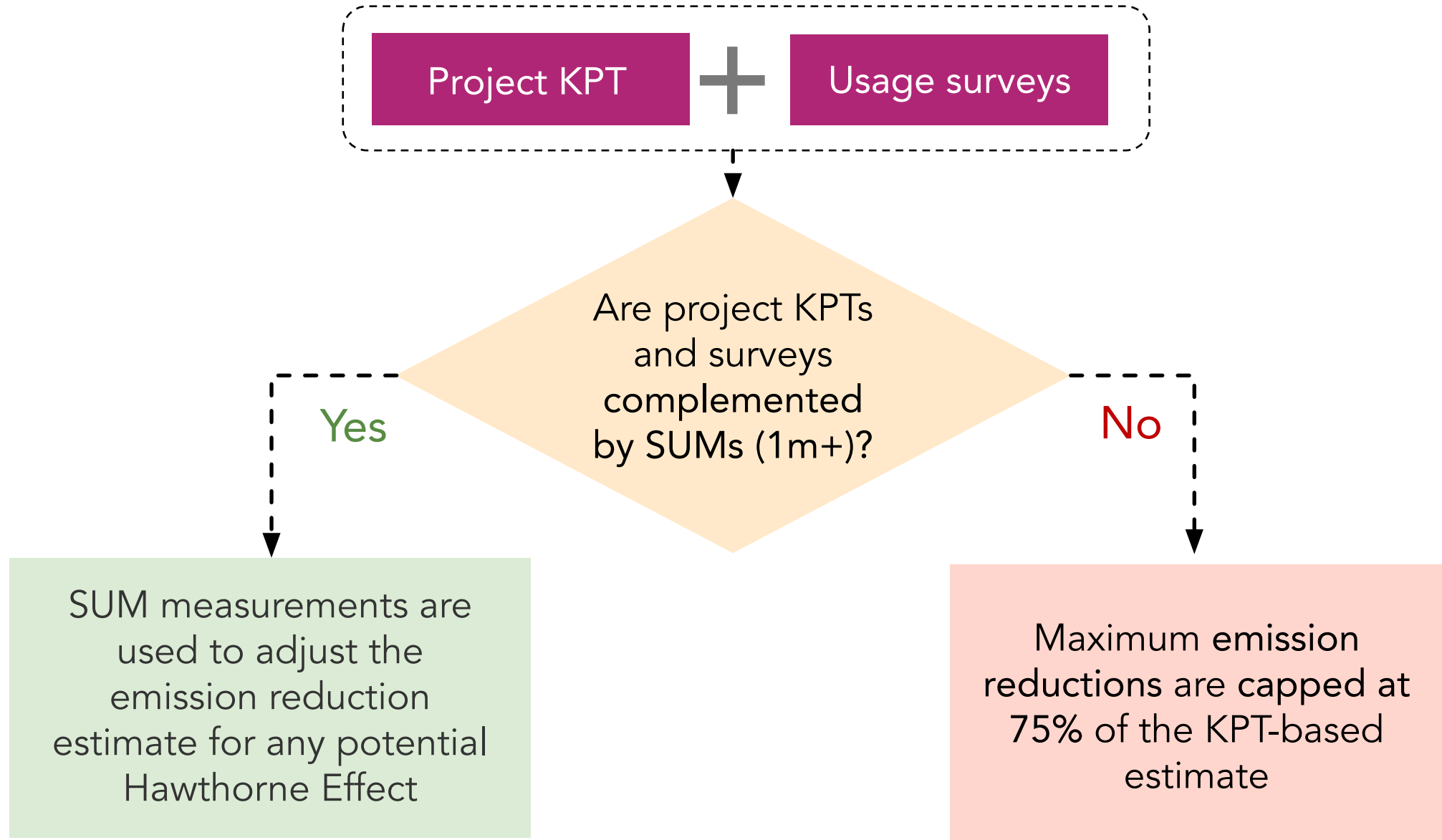
Usage: Non-CTEC options



 Usage and related terms

- User: Project participant with a functioning cookstove that is in use at least once per week
- Usage: Frequency/quantity of cooking
- Project Technology Days (PTDs): # of days for which project technologies are available and in regular use (once or more per week)

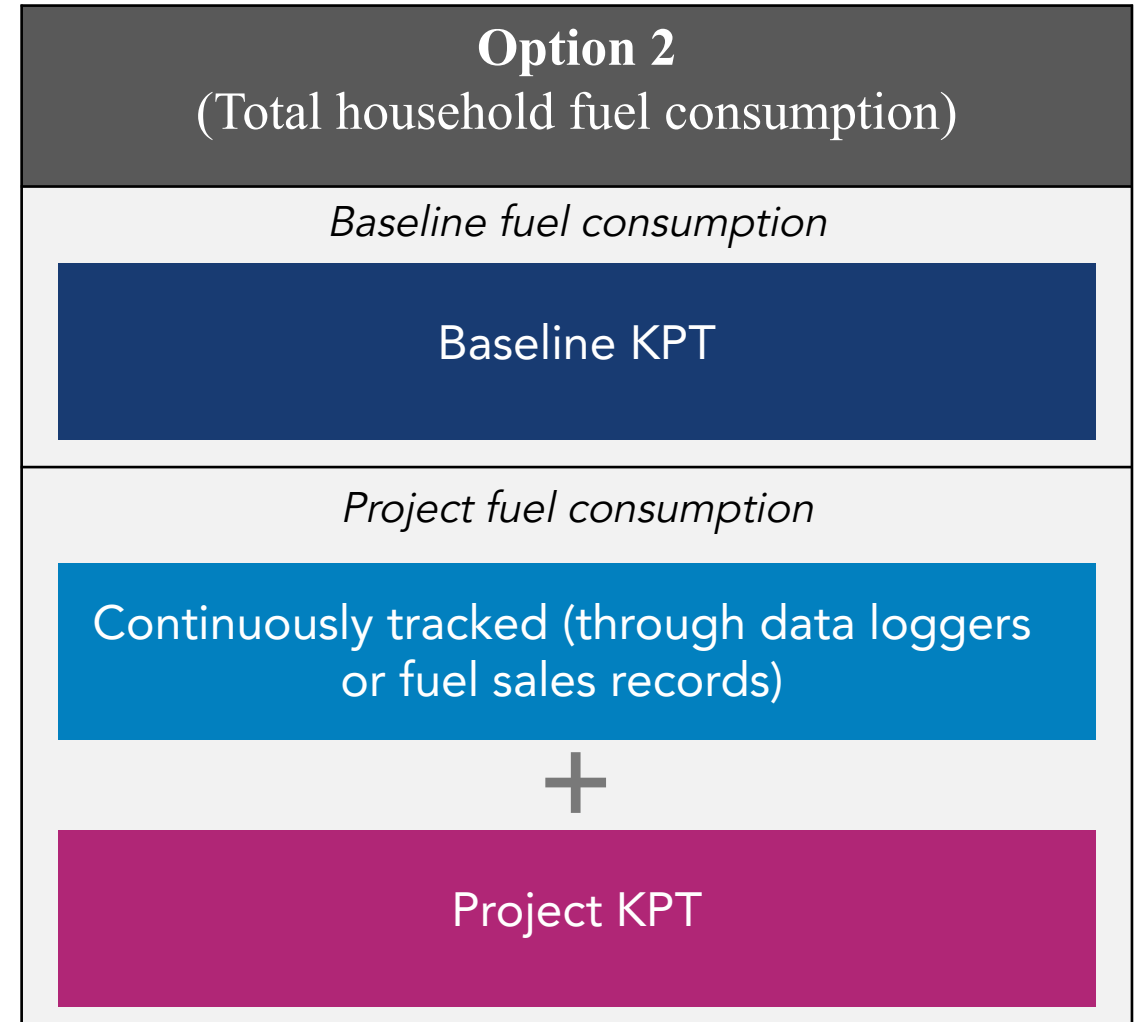
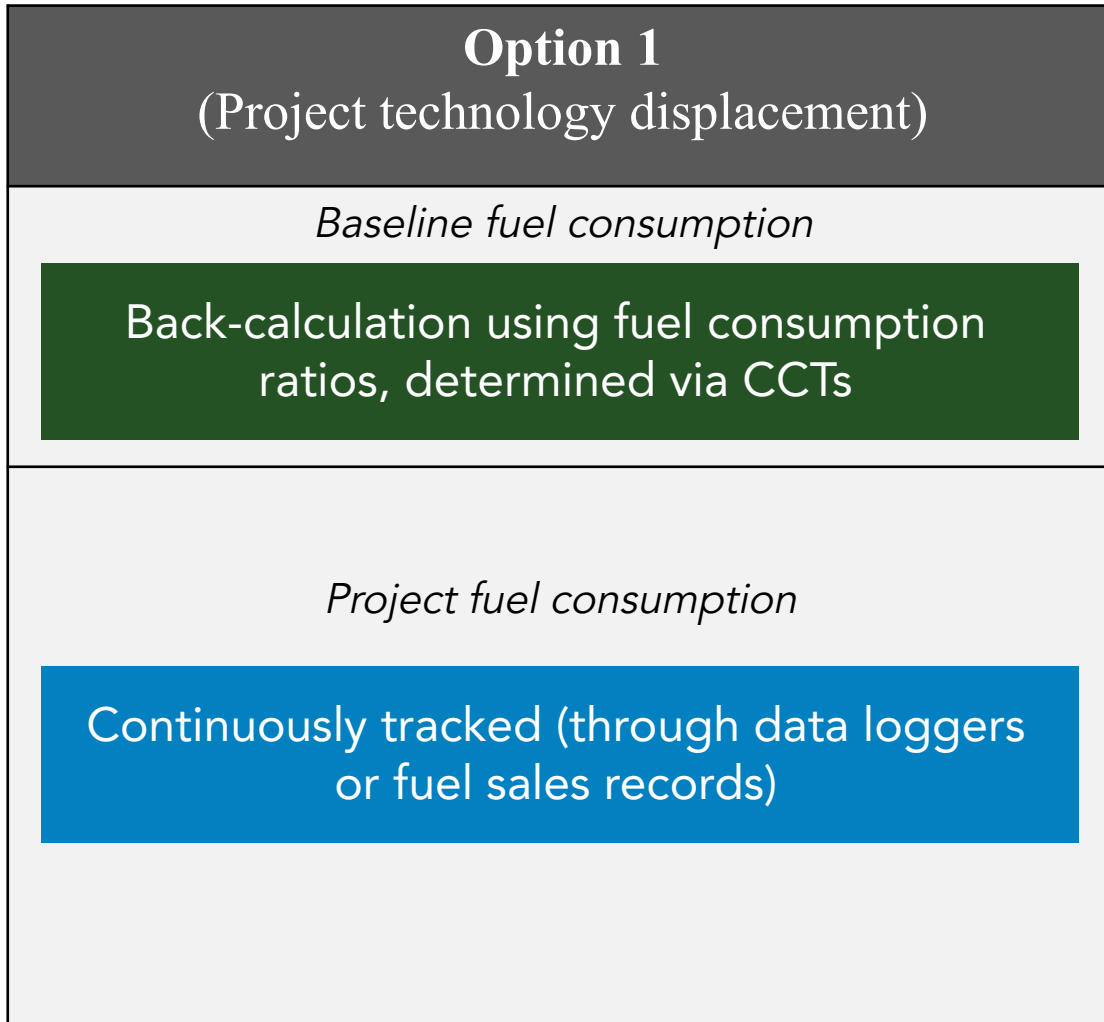
Accounting for the Hawthorne Effect: Non-CTEC projects



Use, adoption, stacking
and fuel quantification

CTEC Projects

Fuel consumption: CTEC options



Approaches for both CTEC and non-CTEC Projects

fNRB

Source of data options:

National or sub-national default values from MoFuSS

Customized project area using online MoFuSS

Project-specific MoFuSS calculations

- Marginal fNRB option is still TBD
- TOOL30 is NOT allowed



Emission Factors & Charcoal Conversion

Emissions	Approach/sources of data
Point of use (including from baseline, project, and both renewable and non-renewable sources)	<ul style="list-style-type: none"> • Default values from the latest version of the IPCC Guidelines for National GHG Inventories • For fuels that do not have an IPCC default value, project proponents shall use literature-based values or project level tests using ISO 19867. • Considers a charcoal conversion factor of 6:1
Upstream (include production, processing, transportation, and distribution of cooking fuels).	<ul style="list-style-type: none"> • Calculated by multiplying energy consumption by an upstream emission factor(s). • The source of these upstream emission factors is <u>Floess et al. 2023</u>. • For pellet fuels, project proponents may estimate their own upstream emissions factors or justify values through published literature. • Grid emission factors should be sourced from the estimates provided by the IFI-TWG on GHG Accounting, or from the marginal grid emission factors provided by the relevant national authority. • Off-grid emission factors should be sourced from: https://www.seforall.org/system/files/2021-08/SEforALL_Carbon-emissions-methodology-note.pdf • Upstream emissions for fuelwood are considered as zero.

Transparency: Project Information Cover Sheet

To be completed at the project design stage (validation) and updated at time of each verification (highlighting changes from originals). Asks project proponents to provide key details of the project such as:



Baseline and project fuel types



Number of households (HH) and average HH size



Approaches used for fuel consumption, fNRB, EFs



Project cookstove(s) ISO thermal efficiencies



Expected CO2e emissions reductions



Number of HHs sampled (if applicable)



ISO Tier(s) for PM2.5 and CO emissions (optional)



Details on customer support actions provided



Justification for values over flagged threshold



Number of cookstoves of each type



Details on how seasonality is addressed



Details on additionality

Next Steps

Timeline: Recent Developments and Next Steps

Finalization

Jul – Nov 2024

4C solicits ongoing feedback to refine methodology

This involved:

- Formal public commenting period
- Revise methodology based on feedback

Key updates made to the methodology will be presented tomorrow at 10:15 am!

Submission & Approval

Nov 2024 – TBD

CLEAR is currently under review for approval and publication, starting with Gold Standard and Verra

ICVCM review pending publication

Planned submission to UNFCCC in the coming months!

Thank you!

For more information on the CLEAR methodology and recent updates:

<https://cleancooking.org/4C/methodology>

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