	CALL FOR INPUT
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Document reference number and title: (Recommendation from the MEP to SBM020) **Draft mechanism methodology: Energy efficiency measures in household cooking (version 01.0)**				
Item	**Section no.** (as indicated in the document)	**Paragraph/Table/Figure no.** (as indicated in the document)	**Comment** (including justification for change)	**Proposed change** (including proposed text)

1	COVER NOTE	-	I would like to thank everyone involved in this draft methodology. I appreciate the work required to update this methodology compared to AMS-II-G. I applaud the requirement of rurality, project KPTs, the Hawthorne adjustment, and the efficiency requirements. Further, I am pleased to see stricter sampling requirements and discussion of overlapping claims. We may see under-crediting from (1) the baseline downward adjustment as annual clean stove adoption is often less than 1% and (2) the buffer pool as MoFuSS considers the gross landscape. Other areas that are conservative and welcome updates aligning with current science are the (1) efficiency thresholds of baseline and project stoves and (2) baseline setting yet we prefer conservative estimates or on the ground measurement (baseline KPTs), However, three core issues remain that will likely lead to over-crediting: (1) the fraction of non-renewable biomass, (2) the usage rates without SUM requirements, (3) the frequency of KPTs, and (4) sampling requirements. These are the major concerns that would outweigh any under-crediting from the points above. I believe these aspects should be highlighted and addressed before this methodology can be adopted. We underline the three most important changes needed to avoid over-crediting and highlight them below. This is the only comment where I don't follow the prescribed template (sorry!) but I wanted to give an overview before diving in. I also will split my comments into two as only 25 comments are allowed. I didn't want to not include the praise/applause comments. This methodology *is* a huge step forward, and I want to acknowledge that.	The current proposed fNRB tool is based “in substantial part” off Ghilardi & Bailis’ 2024 estimates, but includes fNRB values that are higher than Ghilardi & Bailis 2024 for 46 out of 72 national values (i.e., less conservative) without providing explanation for the divergence. This will continue to lead to over-crediting. We recommend that Ghilardi & Bailis (2024) values be used, with the option of choosing a default 30% rate if the country or territory is not covered within Ghilardi & Bailis (2024). Second, the methodology allows projects to claim up to 90% usage without stove use monitors on a sample (let alone universal monitoring), as long as there is some form of “customer support.” That is, if I am a stove company I can hand out a flyer in the local language with a number to call with the stove, survey a sample of the customers, and claim up to 90% usage. With no flyer attached, I can claim up to 75% usage. There is no incentive to actually monitor stove use via stove use monitors. Survey methods are problematic to determine project cookstove adoption and usage due to well established biases (Gill-Wiehl et al. 2024 and the article webpage which summarizes this literature). Participants who have been given a free or subsidized stove are likely to claim to use it when asked on a one time basis. Literature shows that on average adoption rates hover around 58-75% (percent that use the stove at all) and usage rates hover around 52-55% (percent they use the project stove for cooking) within research studies (Gill-Wiehl et al. 2024; Gould 2026). Research studies triangulate between multiple rigorous methods and often longitudinal follow-up with participants to determine their estimates and still find issues with survey based reporting. Further, research studies may represent the higher end of adoption/usage as studies have multiple touch points with participants that increase the likelihood of social desirability to increase project stove usage. Requiring stove use monitoring is one of the most important changes needed to avoid overcrediting; however, if we are to allow projects to survey a sample annually to determine whether the participants used the stove in the past week (they call it usage, we’d call that adoption), then a conservative cap (58%) must be implemented. Finally, while the requirement for KPTs is a huge step forward compared to AMS-II-G, allowing them to only

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				be conducted every two years is not high quality monitoring. To avoid over-crediting, KPTs should be required annually – and performed quarterly to ensure seasonality is captured. Projects that meter the project fuel consumption are being held to this standard under some buyers. Non-metered projects should as well. This is the only form of establishing project scenario fuel consumption and thus project emissions. Methodologies for clean stoves (fuel switching) are requiring 100% metering; why are improved stoves (improved efficiency without fuel switching) being held to such a lower standard. Even when SUMs are used, they only tell you temperature and time. The idea that fuel consumption in the project stove will remain constant for two years is not supported by the literature. While I applaud the change to 95/10 (compared to 90/10) for sample size determination, sample size calculations are based in large part on assuming the distribution is normal and what the project expects the usage rate to be in the population and in the selected sample. Thus, sample sizes are only as rigorous as the assumptions made and the data you base the calculation on. Thus, even though the sample size selection standard has been increased to 95/10, it still does not not necessarily produce robust sampling that truly reflects the population. Strict minimum sample sizes for large cookstove projects (i.e., at least 2000 or 5% of the fleet (Wilson 2024)) should be enforced.
2	COVER NOTE	3.1	I welcome the decision to follow CLEAR in limiting the methodology to improved biomass cookstoves only (no fuel switch scope), and to restrict applicability to rural areas. This appropriately acknowledges that clean stoves should be the interventions in urban areas where the supply chain exists.	No change proposed. Commend this design choice.

Document reference number and title: (Recommendation from the MEP to SBM020)

Draft mechanism methodology: Energy efficiency measures in household cooking (version 01.0)

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3	APPLICABILITY	Table 1 (comparison of applicability conditions)	The methodology explicitly restricts scope to household cooking, excluding institutional settings such as schools and hospitals. In many contexts where clean fuels are unavailable or unaffordable, institutional cooking (particularly in schools) represents a significant source of biomass combustion and health burden. Excluding these settings unnecessarily narrows the methodology's impact.	Consider broadening applicability to include institutional settings (e.g. schools, health clinics) in rural, low-income areas where clean fuel alternatives are demonstrably unavailable, either within this methodology or by flagging it for inclusion in the planned fuel-switch methodology.
4	DEMONSTRATION OF ADDITIONALITY	Paragraph 19	The requirement that activities are ineligible where public sector subsidies are provided for efficient cookstoves or cleaner fuels is overly broad. In many high-burden countries (e.g. India under PMUY), clean fuel subsidies exist but are demonstrably insufficient to drive exclusive adoption in rural, low-income populations. Our own additionality research found that some control households obtained clean stoves through subsidy programmes but continued to rely on polluting fuels due to affordability constraints. The poverty criteria and pre-activity survey provisions in this methodology would already serve as a safeguard against non-additional activities in subsidy contexts.	Revise the text to have the subsidy exclusion apply only where the subsidy is sufficient to fully cover the cost of the clean cooking technology and its ongoing fuel costs for the target population (this is key). Where a subsidy exists but coverage is partial or uptake in the target population is demonstrably low, allow additionality to be demonstrated through the pre-activity survey and poverty criteria instead.
5	DEMONSTRATION OF ADDITIONALITY	General	Strongly welcome the use of a pre-activity survey and the decision not to require a common practice analysis.	No change proposed.
6	COVER NOTE	Section 3.4 (also 7.1.1) -- paragraph 24	While I appreciate the consideration of our research, I disagree slightly with the interpretation of our results. I do not believe the inclusion of a 4.5% penetration threshold check for equivalent technologies is an appropriate ineligibility criterion. Applying a baseline deduction reflecting the penetration of improved technologies is a more appropriate way to address the risk that some stove update at some households may be nonadditional (as we suggest in Gill-Wiehl et al. 2025).	Add a deduction to the baseline or incorporate a non-additionality deduction based on the results of the penetration threshold check. Link the results of the technology penetration assessment (para. 24) explicitly to the regulatory analysis in Section 6.1, so that high penetration of equivalent technologies triggers enhanced additionality scrutiny or a deduction rather than simply acting as a binary eligibility cut-off.

Document reference number and title: (Recommendation from the MEP to SBM020)

Draft mechanism methodology: Energy efficiency measures in household cooking (version 01.0)

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7	BASELINE SCENARIO	Section 7.3.1; Paras. 45-51 (Options 1 and 2)	Option 2 (activity-level ambitious benchmark) is largely superfluous as presented. The mechanism for setting the benchmark based on the top 20th percentile of observed cookstoves adds complexity without clear environmental integrity benefits over Option 1. If the intent is to allow primary data collection, a more useful option would be to permit baseline KPTs (analogous to project KPTs) to empirically measure baseline fuel consumption. In exchange, Option 1 should be made more conservative by setting the useful energy floor at the lower end of the Gill-Wiehl range (2 MJ/capita/day rather than 3 MJ), since activities avoiding primary data collection costs should face a correspondingly more conservative default.	Replace Option 2 with an option permitting baseline KPTs as empirical data input for baseline fuel consumption. If Option 1 (methodology default) is selected, apply a useful energy value of 2 MJ/capita/day rather than 3 MJ to reflect the conservative choice.

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Draft mechanism methodology: Energy efficiency measures in household cooking (version 01.0)

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8	BASELINE SCENARIO	7.4.1; Para. 62-64 (usage caps, Option 1)	The 90% and 75% caps based on customer support measures are not sufficiently conservative. Under the current proposal, an activity participant could distribute stoves, provide a flyer in the local language and a phone number, survey a sample of households once a year, and claim up to 75% usage. The caps need to serve two distinct functions: (1) reflect expected real-world usage rates, and (2) create genuine incentives for SUMs deployment. The current structure does neither adequately. In our work, we distinguish between adoption (i.e., use of the project stove at all) and usage (i.e., percent of meals with the project stove). The methodology refers to usage as what we would call adoption. That is fine, I just want to clarify as I report literature values. Adoption rates: Gill-Wiehl et al. 2024 found average adoption rates of 58%; using different definitions (that we do not fully agree with) Gould 2026 (not-peer reviewed) found an average of 75% Usage rates: Gill-Wiehl et al. 2024 found an average usage rate of 52%; again slightly different definitions, Gould 2026 found an average of 55%.Usage rates will be determined through the KPTs. Regardless, based on the literature, the adoption or "usage" caps are not conservative, even under different definitions. The caps should be conservative to incentivize the use of real-world monitoring. The goal is to have high adoption of project stoves, but this must be backed by rigorous monitoring.	Require SUMs for all projects. This is one of the most important changes needed to avoid over-crediting. If survey-only based methods are allowed, redesign the caps to better incentivize rigorous monitoring: set a default survey-only cap at 58%. Customer support should already be incentivized as SUMs would reflect if stoves are working correctly, people know how to use them, etc. This would more meaningfully differentiate monitoring quality and drive uptake of direct measurement approaches.

Document reference number and title: (Recommendation from the MEP to SBM020)

Draft mechanism methodology: Energy efficiency measures in household cooking (version 01.0)

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9	BASELINE SCENARIO	Section 7.5.2 (Downward Adjustment)	I understand that the 1% annual downward adjustment to the baseline is meant to account for improved technologies spreading without intervention and thus decreasing the amount of baseline fuel needed. However, this adjustment may be arbitrary. We don't know actual rates of improved stove adoption; the research community does not track it beyond the handful of ESMAP Beyond Connection reports. Research (e.g. Stoner et al. 2021) shows that in many target countries, clean cooking adoption rates are far below 1% per year — in some cases below 0.1%. Applying a fixed 1% deduction annually therefore risks over-penalizing activities in the slowest-changing contexts, while providing insufficient pressure in others. Better usage monitoring is a more direct and evidence-based way to ensure baselines remain credible over time.	Replace the fixed 1% annual deduction with a country- or region-specific adjustment rate derived from evidence on improved cookstove adoption trends or Stoner et al. (where there is no ESMAP report).
10	BASELINE SCENARIO	Section 7.6 (Conservative BAU)	Appreciate the use of the upper bound of the uncertainty interval for the conservative BAU efficiency values.	No change proposed.
11	ACTIVITY SCENARIO	Section 8.2.1 / Section 8.2.2 ; Para. 36 (minimum energy check and pro-rating)	The check on minimum useful energy delivered in the activity scenario (0.001095 TJ/person/year) and the pro-rating mechanism where this is not met is a well-designed safeguard. This prevents over-crediting in households where the project cookstove is used infrequently or for limited cooking tasks.	No change proposed.

Document reference number and title: (Recommendation from the MEP to SBM020)

Draft mechanism methodology: Energy efficiency measures in household cooking (version 01.0)

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12	ACTIVITY SCENARIO	8.2.3 : Para. 37 / Para. 96	The 25% default upward adjustment to project emissions (i.e. HEind = 75%) is acknowledged to be somewhat arbitrary, and the Berkeley Air study cited in Appendix 7 as justification was less methodologically robust than the Simmons et al. 2017 study which found Hawthorne effects of 35% rather than 25%. While we appreciate that the adjustment applies from the outset (unlike Gold Standard), the default value needs stronger empirical grounding. Note: There seems to be a mistake in equations 30 and 31 (Paras 94 & 96). You write (1 - HEind) but the "1-" does not apply to the 75% or 1 options, just the ratio).	Retain the 25% default adjustment but recognize that this is not necessarily conservative. Please revise equations 30 & 31 to fix the error.
13	NORMATIVE AND INFORMATIVE REFERENCES	Section 3.9.5 / Data/Parameter Table 8; Para. 41 / EFi,CO2,upstream	The 4:1 wood-to-charcoal conversion factor used for upstream emission calculations is likely too low (i.e. too conservative in the wrong direction — underestimating upstream emissions). The CLEAR methodology review suggests 6:1 is more appropriate for LMIC contexts; Floess et al. translates to ~5:1. Using 4:1 understates upstream charcoal emissions and may undercount the true GHG benefit of fuel efficiency improvements.	Update the wood-to-charcoal conversion factor from 4:1 to at least 5:1, consistent with Floess et al. and the lower bound of recent field evidence. Consider using 6:1 as the default with a note that 4:1 may be applied only where activity participants can provide country-specific evidence of kiln efficiency consistent with that lower ratio.
14	LEAKAGE	Para. 42 (Cover Note) / Para. 108 (Methodology)	Our research supports retaining the 5% figure — we do not yet have evidence for urban contexts and our results may be vulnerable to confounding.	Support keeping the 5% leakage deduction.
15	NON-PERMANENCE PROVISIONS	Para. 44 / Section 10.2	Our thinking has changed on the Reversal Risk Buffer Pool mechanism. Since MoFuSS is using a gross approach to fNRB, permanence at the landscape level is handled by MoFuSS. However, this may change if approaches to fNRB change; thus, we support revisiting the need for non-permanence efforts at methodology revisions.	Remove need for the Reversal Risk Buffer Pool for cookstove projects *if* Ghilardi & Bailis 2024 fNRB values are used.

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16	COVER NOTE	Para. 48 (Cover Note) / Para. 105	While the intent of requiring uncertainty analysis (error propagation or Monte Carlo) is sound, the requirement as drafted may be extremely difficult for most project developers to implement without specialist academic partnerships. Selecting appropriate probability distributions for Monte Carlo simulations and conducting error propagation is technically demanding even for researchers, especially when evidence is scarce. This risks the provision becoming either a rubber-stamp exercise or a barrier to entry for smaller project proponents.	I do not recommend pursuing error prorogation or Monte Carlo. Instead, opt for conservative parameters. I would rather projects put resources towards stove use monitors, more frequent KPTs, etc. than to a consultant to provide uncertainty estimates on parameters that are highly uncertain, potentially correlated, and likely non-normally distributed. This is heightened as it is only evaluating one project rather than a large sample of projects/papers where distributions may be more stable, but still quite unknown. Options to increase the conservativeness of estimated reductions without requiring uncertainty analysis include: (1) relying on the lower bound of the 95/10 estimates, (2) adding an additional adjustment to account for uncertainty (10%?). I personally recommend stricter monitoring and evaluation in lieu of uncertainty analysis. If you are to pursue the Monte Carlo, you will need to provide a template code to support standardised implementation.
17	AVOIDANCE OF DOUBLE COUNTING	Section 12: Para. 54 (Cover Note) / Para. 106	It is not clear how activity participants will in practice demonstrate that emission reductions are not being claimed in other environmental markets or domestic mitigation schemes, particularly for activities operating in jurisdictions with nascent or informal carbon market frameworks. The Waiver Certificate (Appendix 2) addresses the household level (if the household understands it) but not broader market-level overlaps.	The onus should be on UNFCCC to ensure no double-counting across projects and deduct from REDD not cookstove
18	DEFINITIONS	Paragraph 7	Support the proposed threshold of once per week as the minimum use frequency to qualify as a user household. Under our research we would call this the adoption rate (i.e., using the stove at all). This is a practical metric, but I will note that the answer here must be backed by observation.	No change proposed. Support retaining 'once per week'.

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19	APPLICABILITY	Paragraph 13	The poverty thresholds as drafted (MPI ≥ 0.20, or World Bank income lines) may be too restrictive. The primary concern with cookstove projects is not that benefits accrue to households that are too wealthy — it is that stoves are too low quality distributed that the technologies deliver insufficient health or climate benefit. The absence of functioning clean fuel distribution infrastructure in an area is arguably a stronger and more practical proxy for additionality than income metrics alone.	Supplement the poverty criteria with a demonstrated market failure criterion: activity participants should show that clean fuel distribution systems (e.g. LPG retail networks) do not reach the project area, as evidence that income-independent barriers to clean cooking access exist.
20	DATA AND PARAMETERS MONITORED	Data/Parameter Table 16 (HH_income) / Para. 33(d)	Household income is specified as the metric for demonstrating low-income conditions at the household level. In practice, consumption expenditure is a more reliable and commonly used welfare indicator in low-income country surveys — it is more stable over time, less subject to recall bias, and better reflects actual household wellbeing and purchasing power (de Janvry & Sadoulet 2021, Development Economics, Theory & Practice, 2nd Edition) .	Replace or supplement 'daily household income' with 'daily household consumption expenditure or income'
21	ACTIVITY SCENARIO	Para. 87 / Equation 25	Paragraph 87 and Equation 25 address secondary fuels only where they are identified in the pre-activity survey. However, secondary fuels may appear in the activity scenario that were not present in the pre-activity scenario (e.g. a household begins using LPG during the activity period). The current language does not provide guidance for this case.	Revise para. 87 to clarify that Equation 25 also applies to secondary fuels that emerge in the activity scenario but were not present in the pre-activity scenario, and specify how such fuels are incorporated into the emission reduction calculation.
22	MONITORING REQUIREMENTS	Table 5 / Para. 112	KPTs are required at least every two years. Given the documented decline in cookstove thermal efficiency with use (and age) and usage changes over time, two-year intervals may be insufficient to capture usage and performance deterioration accurately, particularly for activities with longer monitoring periods or for stoves approaching end of life.	Increase KPT frequency to at least annually, and require that they are conducted seasonally. That is, if 100 KPTs are required, 25 are conducted every 3 months. This is one of the most important changes needed to avoid over-crediting.

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23	DATA AND PARAMETERS NOT MONITORED	Data/Parameter Table 10 (fNRB)	The fNRB tool referenced (A6.4-AMT-XXX) is still under development. It is noted that the current CDM Tool 33 made changes that were largely opaque and moved towards higher fNRB values (less conservative). The 2024 Ghilardi & Bailis study provides updated and more geographically granular fNRB estimates and should be incorporated as a key reference in the forthcoming Article 6.4 fNRB tool.	Ensure the A6.4 fNRB tool explicitly uses the Ghilardi & Bailis 2024 values. This is one of the most important changes needed to avoid over-crediting. If a country does not have an estimate in Ghilardi & Bailis 2024, then allow the 30% default or regional default to be implemented.
24	APPENDIX 4	Section 2	Survey, KPT, and even SUM based methods are further troubling when based on a limited sample. While I applaud the change to 95/10 (compared to 90/10) for sample size determination, sample size calculations are based in large part on the assumptions that the distribution is normal and about the expected usage rate in the population and in the selected sample. Thus, sample sizes are only as rigorous as the assumptions made and the data you base the calculation on. For instance, even under 95/5 (i.e., more stringent than 95/10), a 50,000 stove project may only need to survey 200 customers if they expect to have high usage rates in the population and sample. The limitations in survey methods often leads to finding high usage, whether because of limitations in the tool, social desirability bias or recall bias. Thus, even though the sample size selection standard has been increased to 95/10, it still does not necessarily produce robust sampling that truly reflects the population. Strict minimum sample sizes for large cookstove projects (i.e., at least 2000 or 5% of the fleet (Wilson 2024 – below)) should be enforced. https://carbon.geocene.com/carbon/sums/2024/03/28/how-many-sums	Require stricter minimum sample sizes and for large scale projects require at least 2000 or 5% of the fleet. This is one of the most important changes to protect against over-crediting.

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25	APPENDIX 5	Paragraph 9	The guidance on fuel provision during KPTs raises legitimate concerns about measurement bias. However, the proposed alternative of excluding households that cannot self-supply fuel may itself bias the sample towards wealthier or better-resourced households. A cleaner approach would be to use the weight-addition method (recording the weight of fuel added to the cookstove directly) rather than household fuel storage as the measurement basis, which avoids both provision bias and sample exclusion.	Add the weight-addition method (weighing fuel added at each cooking event) as a preferred protocol for households unable to store a full day's fuel, before resorting to fuel provision or sample exclusion. This approach is well-established in KPT methodology and avoids the behavioural distortions associated with external fuel provision.