

Head and Members of the CDM SSC WG

To jstickdorn@unfccc.int
From atmosfair gGmbH (Robert Müller; Xaver Kitzinger; Katrin Wolf; Maren Kügler)
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Subject Call for Input: Revision of the methodology "AMS-II.G: Energy efficiency measures in thermal applications of non-renewable biomass"

Honourable Members of the SSC working group,

In response to your call for public input on AMS-II.G version 6, please consider the following input from atmosfair on this subject.

In § 12a and 15, a regular decrease of cookstove efficiency is assumed.

Experience shows that in the case of high quality stoves, efficiency tends to remain stable over several years (for example see the Monitoring Reports for the project in Nigeria ID: 2711) and the effective efficiency may even increase due to growing expertise in the households to use them. We therefore suggest to add an additional option, for example:

"A constant value of η_{new} may be used for all stove vintages if the average efficiency is determined by testing a representative sample of stoves including equal numbers of stoves belonging to the current year (youngest vintage) and stoves belonging to the oldest population."

In § 15 and 16: Default efficiencies are given and may be applicable to charcoal stoves in the baseline.

Traditional charcoal stoves tend to have efficiencies far above 10% since in virtually all cases, some form of grate for ventilation is used (e.g. a GTZ overview on cook stoves world wide shows that for traditional charcoal stoves the efficiency is 10% for only one stove and often above 20%¹ all of them have some kind of a grate); therefore the assumption of the 10% default value is not conservative and should not be allowed for charcoal stoves. E.g. in the case of urban Rwanda 40% of the charcoal stoves used are already improved charcoal stoves² which already have an efficiency of 32.5%-36.5%³. Therefore a default baseline efficiency of 10% or even 20% would not be conservative.

We suggest to add as a limitation: "Where baseline stoves are charcoal stoves, the default value for stove efficiency shall be 20% if it can be proven that the most widely used charcoal stove in the country is not an efficient charcoal stove with an efficiency of >20%."

We would also like to bring to your attention that there is a loophole in the methodology which can result in positive GHG emissions instead of emission reductions: The distribution of improved charcoal

¹ <http://www2.gtz.de/dokumente/bib/97-0621c.pdf>

² See: "IMPLEMENTATION PLAN FOR INCREASING THE ADOPTION AND USE OF EFFICIENT CHARCOAL COOKSTOVES IN URBAN AND PERI-URBAN KIGALI" USAID May 2007 page 4.

³ See: "BIOMASS USE SURVEY IN URBAN AND RURAL AREAS IN RWANDA" EWSA May 2012 page 56.

stoves may encourage users who use firewood for cooking in the baseline to switch to charcoal as a cooking fuel in the project scenario since charcoal is a cleaner fuel and more convenient when cooking. The charcoal stoves may be highly subsidized due to carbon credits or could even be distributed for free which would remove a barrier for wood users to acquire a charcoal stove and start using charcoal instead of wood.

This may lead to reduced emission reductions or under certain circumstances even to positive emissions, due to the generally very inefficient production of charcoal: Often 9 to 10 kg of wood have to be processed to produce 1kg of charcoal (default conversion factor is 6 in AMS-II.G), while the heating value of charcoal is only about double that of wood.

Therefore, project participants should monitor that improved charcoal stoves always replace traditional charcoal stoves and not wood stoves.

Example:

Baseline scenario: Baseline appliance is Three Stone Fire. Baseline fuelwood consumption is assumed as:

$B_{old} = 3$ tons of woody biomass per year and household

Project scenario: A charcoal stove replaces the three stone fire. It is 3 times more efficient than the Three Stone Fire ($\eta_{new} = 30\%$ in comparison to $\eta_{old} = 10\%$). Moreover, the NCV of charcoal is 2 times the NCV of fuelwood. Charcoal consumption (in tons) will thus be 6 times ($3 \cdot 2$) less than the baseline fuelwood consumption i.e. 0.5 tons per year and household. If assuming a default conversion factor of 6 for the conversion of wood to charcoal, this will correspond to a fuelwood consumption of:

$B_{new} = 3$ tons of woody biomass per year and household

Thus, no emission reduction are achieved by the introduction of an charcoal stove. If the conversion factor is more than 6 there would be positive emissions.

§20: Data loggers are mentioned to monitor the continued use of baseline stoves.

The use of data loggers to record the possible continued operation of baseline stoves is not practical in case of the most common baseline stove: The three stone fire. We suggest to allow for more practical approaches, including, for example:

A plausible description of cooking habits and stove suitability in the PDD, explaining the reasons for which continued use of baseline stoves can be expected (for example social events with a large number of eaters). Moreover, during monitoring a questionnaire should help to quantify possible use of baseline stoves, by asking for the frequency of usage of both the project stoves and baseline stoves.

A technical solution is not only not feasible in case of three stone fire but is also increasing the complexity and costs for the project implementation and is increasing the risk of non-issuance because of technical problems with the data loggers which are very likely under the given project circumstances. The increased risks will make it more complicated for project developers to secure the upfront investments required if they rely on the future CER revenues for the project finance.

§34, Sampling approaches

In cookstove projects, it is required to monitor stove efficiency, together with stove usage and possible additional parameters such as continued use of baseline stoves. While stove usage and additional parameters can generally be assessed by simple on-site checks and questionnaires, efficiency monitoring requires of sophisticated tests, implying several hours spent in each household by trained and certified experts using calibrated equipment which is generally not available in developing countries. Typically monitoring of cook stove projects takes place in vast areas with rudimentary infrastructure; visiting of

representative samples of households under such conditions represents a huge effort and often requires many entire days spent travelling. Moreover the monitoring and especially the efficiency tests imply a mayor interruption of the households' daily activities.

It is therefore very helpful and even necessary to monitor both stove efficiency (generally WBT Test), stove usage (survey) and other possible parameters (survey) in a single effort. According to the sampling standard ver. 04.1 (EB 50 Annex 30) however, this would imply to test the stove efficiency in each single household interviewed⁴ on stove usage, though the sampling size for this parameter (a mean value parameter) is generally much lower than for proportional parameters such as stove usage. This is illustrated in the example given in the sampling guidelines vers. 3 page 59, where minimum sample sizes are 98 for stove usage (here called "retention rate"), 62 for continued use of baseline stoves and 34 for stove efficiency. According to this example and the sampling standard ver. 04.1, efficiency would have to be tested for 98 stoves if a common survey is chosen.

Testing the efficiency of such large numbers of cookstoves is not feasible with reasonable effort. Moreover, such large oversampling for efficiency testing will not lead to any improvement of data and is statistically unnecessary since the 90/10 precision can also be achieved with much lower sample sizes for the efficiency.

But also the selection of separate samples for each single parameter would lead to huge, unjustified efforts that can hardly be born under LDC conditions. (98+62+34=194 households to be visited in the case of the example of the sampling guidelines mentioned above).

Since the requirements of the methodology regarding sampling have precedence over the sampling standard (see Sampling Standard §3) we suggest to add the following to the methodology:

"Efficiency of devices may be monitored in a common survey with other monitoring parameters; therefore, a random sub-sample within the common survey can be taken for which stove efficiency is tested, as long as the required precision for stove efficiency is achieved."

We would like to thank you for the opportunity to provide input!

Kind regards,

A handwritten signature in black ink, appearing to read "Robert Müller".

Robert Müller

CDM project development, atmosfair gGmbH

About atmosfair:

Atmosfair gGmbH is a non-profit organisation for climate protection incorporated in Germany. Founded in 2005, atmosfair actively protects the climate by promoting compensating greenhouse gases through the use of renewable energies and energy efficiency in 15 projects worldwide. Atmosfair is a pioneer for the development of efficient cook stove projects. We developed the first registered efficient cook stove project under the CDM which was also the first project to receive issuance of CERs (ID 2711). Today we are implementing CDM cook stove projects in Nigeria (ID 2711 and 5067 PoA), Rwanda and Cameroon (ID6207 PoA), Lesotho (ID 5482), Kenia (ID 6549) and India (Gold Standard). All projects are also registered under the Gold Standard. www.atmosfair.org

⁴ See Footnote 8 of EB 50 Annex 30:

“⁸If there is more than one parameter to be estimated in a CDM project activity, then a sample size calculation should be done for each of them. Then either the largest number for the sample size is chosen for the sampling effort with one common survey or the sampling effort and survey is repeated for each of the parameters. “