



CDM: Recommendation Form for Small Scale Methodologies (version 01)

(To be used for presenting questions/proposals/amendments to the simplified methodologies for small-scale CDM project activity categories)

Date of SSC WG meeting:	15–18 June 2010, SSC WG 26
Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):	Expanding the applicability of AMS-III.X
Indicative methodology to which your submission relates (refer the items of Appendix B of the Simplified Modalities and Procedures), if applicable.	AMS-III.X “Energy Efficiency and HFC-134a Recovery in Residential Refrigerators”
Name of the authors of the query:	Anne Arquit Niederberger Institution: Policy Solutions policy.solutions@comcast.net

Summary of the query:

Please use the space below to summarize the query related to SSC methodologies/categories SSC Modalities and Procedures provide recommendation/analysis of the SSC WG.

Original text from Stakeholder:

I am submitting additional material related to the Request for Revision of AMS III.X. SSC_393 as requested by the SSC WG in the Report of its 25th session, as well as in response to the SSC WG Final Recommendation on SSC_393. This includes:

- An example PDD “Promotion of Highest Efficiency Refrigerators in China (XXX Province Pilot)”, to clarify how a rebate scheme for the retail purchase of new refrigerators might work under the CDM and to demonstrate the application of the proposed revised version of AMS III.X. to a real project case of this type. For confidentiality reasons, I have given a fictitious name for the project owner company.
- An example PDD for the project activity “Replacement of Domestic Refrigerators in Low-Income Households in São Paulo”, to demonstrate how the proposed changes would be applied to a refrigerator replacement program.

In addition, I would like to take the opportunity to comment/provide feedback on the responses provided by the SSC WG on some issues raised in SSC_393:

- Baseline for new refrigerator program (without exchange of old refrigerators): Para. 7 of the methodology requires that a different energy baseline be used for activities that do not involve replacement of old refrigerators. This is consistent with the CDM modalities and procedures, and the attached example PDD illustrates how such a program might function (the PDD is for a private sector rebate scheme to incentivize the retail purchase of high-efficiency refrigerators). The term “greenfield refrigerator program” should be avoided. All projects that apply AMS III.X. will require new project refrigerators; the energy baseline may be either existing refrigerator efficiency (in the case of refrigerator exchange programs) or based on the efficiency of new refrigerators in the baseline (for project activities that do not involve direct “old-for-new” refrigerator exchange).
- Energy efficiency projects without HFC reduction component: The SSC WG is considering recommending a separate Type II methodology, based on the existing structure of AMS III.X., for refrigerator projects that do not involve an HFC reduction component. We would advise against this

for several reasons. Most importantly, it is not possible to know until a refrigerator program is implemented, households decide to participate and old refrigerators are exchanged and demanufactured, how many of them will contain HFC as a refrigerant. Thus at the time of validation, it would not be possible to know whether the existing Type III methodology or the parallel Type II methodology would be applicable. Secondly, there are other Type III methodologies that allow implementation of only energy efficiency measures, for example, AMS III.AE. Thirdly, the methodology requires recovery of refrigerants (HFC-134a, CFCs) under refrigerator exchange programs, even if these emissions reductions are not credited – so there is a non-EE component to the methodology, even if not credited (making the methodology extremely conservative, when applied in such cases).

- Requirement to replace refrigerators at low or no cost: CER revenues are insufficient to buy down the cost of new refrigerators to the extent that they can be offered at low or no cost (a typical fridge might lead to 1 – 2 t CO₂ reductions over a 10-year crediting period); so the current version of the methodology can only be applied when the cost of the refrigerators is heavily subsidized by some other source. We seek to expand the applicability of the methodology to unsubsidized CDM project activities. We do not understand the concern of the SSC WG on this point and welcome further explanation.
- Requirement to install fridges within first year: We would like the SSC WG to please clarify the intended purpose of this requirement. It seems to presume a specific project design under which the project proponents will procure and install all equipment in discrete lots, whereas other program designs rely on end-users (rather than project participants) to take a decision to participate in a program and then install the equipment themselves. In the case of the example PDD for the retail refrigerator rebate scheme, for example, people will choose to participate in the scheme on a rolling basis for as long as it operates, and the number of fridges in service will be determined by a survey annually, so what purpose does the requirement to install fridges within the first year serve? It appears to us to merely require multi-year incentive programs to be divided into multiple project activities, adding transaction costs and DOE backlog with no apparent function in terms of environmental integrity.
- Direct installation: Direct installation does not appear to be prescribed by any other methodology – and would exclude a range of program designs, such as the rebate scheme in the example PDD. In lieu of direct installation, this methodology requires monitoring the number of fridges actually in service on an annual basis, and it is in any case highly unlikely that a household would purchase, but not install, a fridge, which is a major expense and a large piece of equipment to keep “on reserve” in a residential setting.
- Fugitive emissions: We repeat once again that neither the methodology nor the requested revisions seek to credit fugitive emissions of refrigerants from sealed systems during the operational phase of the refrigerator, contrary to what the SSC states. This is the key misunderstanding that must be resolved, and we would welcome the opportunity to provide further information to respond to any questions the SSC WG might have. That having been said, we also maintain that a cap on the share of CERs that can be issued for HFC-134a reductions, which varies by grid emissions factor, bears no relation at all to the point in time at which fugitive emissions might occur (although not relevant to AMS III.X., as such fugitive emissions are not allowed to be credited under the methodology).
- Emission reductions from non-Kyoto GHGs: It is important to clarify that we have not requested that emissions reductions from non-Kyoto gases be included in the project boundary, as this is ruled out by the CDM modalities and procedures, but rather that they be taken properly into account in the estimation of net leakage, as defined by the CDM Executive Board. Net leakage is defined as taking into account both increases and decreases in GHG emissions outside the project boundary, and the CDM EB has in at least one case specified how increases in non-Kyoto gas emissions are to be taken into account. Our revision seeks to address net leakage of these strong GHGs, consistent with the official definition of “leakage”. If the SSC WG is not the competent entity to deal with this issue, then we would appreciate it if the SSC WG would convey this to the CDM EB and request the EB to consider this aspect of the Request for Revision. As pointed out in the context of the Montreal

Protocol, these “end-of-life” emissions of powerful GHGs are a serious challenge to address, as they are not regulated under any regime. The CDM is one window to address them in a way that is fully consistent with the CDM modalities & procedures and the CDM EB definition of leakage.

- Leakage associated with recycled metals: We have proposed to treat recycled steel and aluminum and the relative impact of recycling vs. the primary route as leakage, since raw material production is outside of the project boundary and not part of the project activity. Under AMS III.AJ, on the other hand, virgin material production is within the project boundary. We have therefore taken a different methodological approach, relying on best available data from life-cycle inventory analysis to apply default values.

As usual, in the process of working with the methodology again in detail, I discovered a few improvements that could be made to the revised version:

- Because the provisions under Para. 19 of the revised version originally only applied to projects implemented under a PoA, it contains several references to CPAs that should be removed to avoid confusion.
- There is an error in Equation 9 of the proposed revision of AMS III.X. The two leakage terms are additive, so the equation should be modified as follows: $L_y = L_{RM,y} + L_{ODS,y}$. Related to this, to avoid confusion, the description of the $L_{RM,y}$ parameter should indicate that the default values are negative (as they reduce greenhouse gas emissions outside of the project boundary). This could read as follows (merely adding the “minus” signs):

Leakage associated with recycled materials: Net change in anthropogenic greenhouse gas emissions associated with “cradle-to-gate” energy consumption of selected materials, which occurs outside the project boundary, and which is measurable and attributable to the CDM project activity in year y (t CO₂-eq). If in the absence of the project activity, the old refrigerators nonetheless ultimately would have been recycled, $L_{RM,y} = 0$. Otherwise, the recycled material leakage ($L_{RM,y}$) is calculated using the following default values per ton of material recovered at the recycling facility:

- Steel: – 1.5 t CO₂-eq/t steel
- Aluminum: – 8.5 t CO₂-eq/t aluminum

A weighted average value for the default leakage factors for each material can be used in situations where some fraction of baseline refrigerators would have been landfilled in the baseline. If reliable data on the fraction of landfilling vs. recycling is not available, a default value of 50% landfilling may be used, decreasing by 1% annually through 2040, beginning in 2016^[1].

- In the example PDD for the retrofit case, I have added two parameters to be monitored, which are the amounts of steel and aluminum recovered annually. It might improve transparency/ease of use to explicitly define the leakage term for recycled metals as follows:

$$L_{RM,y} = (Q_{steel,y} * -1.5 \text{ t CO}_2\text{-eq/t steel}) + (Q_{aluminum,y} * -8.5 \text{ t CO}_2\text{-eq/t aluminum})$$

Where: $Q_{steel,y}$ Amount of steel by weight recovered at recycling facility in year y (t)

$Q_{aluminum,y}$ Amount of aluminum by weight recovered at recycling facility in year y (t)

- Analogous to the previous point, it might be advisable to explicitly define the leakage term for ODSs as follows:

$$L_{ODS,y} = \sum_i (Q_{ODS,i,y} \times GWP_{ODS,i})$$

Recommendation by the SSC WG:

Please use the space below to provide amendments/change (in your expert view, if necessary).

Please refer to paragraph 6 of the meeting report of the SSC WG 26 (http://cdm.unfccc.int/Panels/ssc_wg).

Answer to authors of query by the SSC WG:

Please use the space below to provide answer to the authors of the above query

The small-scale working group (SSC WG) of the CDM Executive Board would like to thank the author for the submission.

The SSC WG noted that SSC_430 was not received on time to allow for a revision of AMS-III.X, however the SSC WG would like to take the opportunity to respond to the submission as below:

- The SSC WG agreed to consider expanding AMS-III.X to include an option where the baseline refrigerator would be a new refrigerator that would have been purchased instead of the project refrigerator. However, the SSC WG is not yet convinced by the proposed selection criteria for establishing the efficiency of the new refrigerators in the baseline. The efficiency of the avoided new refrigerator that would have been purchased in the absence of the project activity may very well be above the efficiency of refrigerators that meet the minimum requirements of a labeling scheme or other voluntary programs. The SSC WG would like the project proponent to consider providing another strategy for identifying avoided new refrigerator baseline efficiencies, such as documenting the efficiency of the top X% of refrigerators sold in the market or the use of fixed minimum standard efficiency tied to an existing rigorous national standard. In addition, the project proponent may need to address the fact that refrigerators have a wide range of features and volumes and thus a single avoided new refrigerator baseline efficiency would probably not be sufficient for covering all types of potential project refrigerators and thus perhaps either a matrix of values or a lowest efficiency for a range of refrigerators would be required;
- The SSC WG would also appreciate the project proponent addressing the issue of free ridership in programs that are not specifically designed for very low-income populations (as was the case for the PDD used for the design of the existing AMS-III.X). For example, in cases of rebate programs free ridership can be very high;
- The SSC WG realizes the difficulties of having both a Type II and Type III methodology for efficient refrigerators, and is considering recommending to the CDM Executive Board that both projects that do and projects that do not claim emission reductions for recovering HFC may use the existing Type III methodology;
- The requirement to offer the refrigerator at low or no cost was included in AMS-III.X as a safeguard to ensure the consumer would not be purchasing a new and more efficient fridge anyway in the baseline, as the baseline scenario was based on the efficiency of the existing fridge. And, as noted above the original methodology was designed around a very low-income population, and thus this provision was included to ensure the methodology was applied for such a population under a subsidized social services type program and baseline refrigerators would be properly recycled. The SSC WG is willing to consider alternative requirements that would ensure the baseline is not the purchase of a similar refrigerator;
- The SSC WG intends to consider removing the requirement of installation of fridges within the first year;
- The SSC will consider removing the requirement of direct installation if baseline definitions and free ridership considerations can be taken into consideration for a wider range of distribution methods. In addition, ensuring that the baseline refrigerator (in cases where the baseline is an existing unit) is destroyed is an important consideration for minimizing or eliminating leakage associated with the use of “second” refrigerators or the sale of refrigerators in secondary markets (replacing the sale of new, more efficient refrigerators);
- The SSC WG may review the cap on share of CERs that can be issued for refrigerant (HFC-134a)

emission reductions, however such a cap should be reviewed in the context of other possible changes to the methodology and the relevant guidance from the Board on the topic;

- The SSC WG further agreed to reiterate that it is unable to recommend introduction of emission reductions related to non-Kyoto greenhouse gases whether directly as mitigation of baseline emissions or as a positive leakage;
- The SSC WG is of the opinion that adding a material-recycling component to a methodology that already encompasses energy efficiency and reduction of HFC-134a emissions is not in line with the goal of having simplified small scale methodologies.

Thus, in consideration of the above comments, the SSC WG suggest a new submittal by the project proponent following the procedure for request for revision

<http://cdm.unfccc.int/Reference/Procedures/methSSC_proc02_v01.pdf> for consideration at the SSC WG 27.

Signed by the Chair, Mr. Peer Stiansen

Date: 18/06/2010

Signed by the Vice-Chair, Mr. Hugh Sealy

Date: 18/06/2010

Information to be completed by the secretariat

SSC-Submission number	SSC_430
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