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:	30 January−02 February 2012, SSC WG 35
Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):	Clarification on the requirement of AMS-II.C for project activity replacing inefficient refrigerators
Indicative methodology to which your submission relates (refer the items of Appendix B of the Simplified Modalities and Procedures), if applicable.	AMS-II.C "Demand-side energy efficiency activities for specific technologies"
Name of the authors of the query:	Nejib Osman Institution: Agence Nationale pour la Maîtrise de l'Energie osman.nejib@anme.nat.tn

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 PP:

The Agence Nationale pour la Maîtrise de l'Energie (ANME) is developing a PoA aiming at replacing 400 000 old refrigerators, by new, energy efficient ones.

The methodology chosen for the PoA is AMS II-C, Demand-side energy efficiency activities for specific technologies --- Version 13.0. This methodology is said to "encourage the adoption of energy efficient equipments/appliances", including refrigerators. So far, no SSC PoA DD using this methodology has been submitted for registration, neither other equipments using refrigerant gases.

The methodology AMS II-C is applicable to the above mentioned project; which is focusing on energy efficiency, while AMS III-X is applicable to project aiming at improving Energy Efficiency and recovering HFC-134a.

However, to use AMS II-C for this refrigerator project, some questions need to be clarified.

Question 1: Output level

To apply AMS II-C, we intend to use the notion of "adjusted volume", as defined in the bylaw of September 10th 2004 taken by the Tunisian government, article 3 (close to the definition of Directive 94/2/CE).

For the record, methodology AMS III-X states that "the volume capacity of the project refrigerators installed is at least 80% of the average volume capacity of baseline refrigerators to ensure that service demand is met under the project activity". However, in the refrigeration technology, the simple volume capacity doesn't really reflect accurately the level of service.

In that context, the "Adjusted Volume" is the most appropriate indicator as it reflects the level of service offered by the refrigerator (using a conversion factor of different cold intensity to homogenize the notion of volume, as well as other services such as ventilation), and is used in the calculation of the Energy Efficiency Rating.

Can you clarify if the condition to be met in paragraph 2 of AMS II-C can be in our case: the rated output –or level of service- is the adjusted volume (defined above), and the average adjusted volume of project refrigerators is not significantly smaller (max -10%) or significantly larger (max +50%) than the average adjusted volume of the baseline refrigerators?

Question 2: Accounting for the emissions due to refrigerant gases

2.1 Methodology AMS II-C states that "this methodology credits emission reductions only due to the reduction in electricity consumption from use of more efficient equipment/appliances". However, baseline equation (1) accounts for baseline emissions due to the replacement of leaked refrigerant. Thus, refrigerant gases enter in the calculation of emission reductions, equation (7).

2.2 Similarly, according to paragraph 9, "projects emissions from physical leakage of refrigerants are accounted for".

2.3 Equation (5) which determines project emissions in year y does not account for emissions due to refrigerant leakage. The equation (6) which estimates emissions due to refrigerant leakage is neither included in the calculation of emissions reductions as per equation (7).

2.4 Either for baseline emissions or project emissions due to refrigerant emissions no monitoring is included for these parameters.

2.5 Considering that the leakage of refrigerants is most likely to be less with the replacing refrigerators because of their higher manufacturing quality, and that most of the baseline refrigerators are likely to contain CFC, we believe that the emissions due to leaking refrigerant would be substantially reduced with the project.

Furthermore, whereas at the moment they are not recovered, we are intending in the project to recycle the old refrigerators and recover their refrigerant. Therefore, the environmental impacts as regards to the refrigerant will most probably be positive.

Consequently, we suggest not accounting for the project refrigerant, neither in the baseline nor in the project emissions. This would anyhow be a conservative approach, and would prevent from establishing specific monitoring measures which would not be easy to handle under a small scale project category context. Is this suggestion acceptable?

Question 3 Monitoring of baseline emissions

For refrigerators, it is neither possible to monitor operating hours nor it represents a relevant parameter to estimate energy consumption. Thus it will be necessary to monitor energy consumption in order to calculate baseline emissions.

For example the simplified approach used for CFL retrofitting assumes that an *ex-post* monitoring of operating hours for the replaced bulbs gives both project and baseline operating hours.

Furthermore, AMS II-C does not require monitoring the replaced equipments: paragraph 13 and 15 require the monitoring of "the devices installed", in other words project equipments. These are far from reflecting the baseline equipment, and preclude from having any comparability basis.

As per illustration, to determine project emissions, Methodology AMS III-X requires a monitoring of baseline refrigerators, with the same testing standard (ISO 15502) as for baseline. This appears to be a much more logical approach for refrigerators.

Is it possible, for this specific kind of appliance, to consider within the methodology AMS II-C to monitor the baseline emissions according to the same testing standard (e.g. ISO 15502) that is used to determine the annual nameplate energy consumption of the project refrigerators?

Recommendation by the SSC WG:

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

Please refer to paragraph 36 of the meeting report of the SSC WG 35 <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 of the CDM Executive Board would like to thank the author for the submission.

Query 1: Can you clarify if the condition to be met in paragraph 2 of AMS-II.C can be in our case: the rated output –or level of service- is the adjusted volume (defined above), and the average adjusted volume of project refrigerators is not significantly smaller (max -10%) or significantly larger (max +50%) than the average adjusted volume of the baseline refrigerators? Specifically, the author of the query has requested information on whether it is acceptable to use the notion of "adjusted volume", as defined in the bylaw of September 10th 2004 taken by the Tunisian government, article 3 (close to the definition of Directive 94/2/CE)?

Response 1: Yes, it is acceptable, for a project implemented in Tunisia, to use article 3 (and 4) of the bylaw of September 10th 2004 taken by the Tunisian government to define adjusted volume. In general, adjusted volume can be used for assessing comparability of project and baseline refrigerators; and adjusted volume can be calculated using regional or national standards or the following definition of adjusted volume as established by the U.S. Government's Energy Star program:

Refrigerator Adjusted Volume = Fresh Volume + (1.63 x Freezer Volume).

Freezer Adjusted Volume = 1.73 x Freezer Volume

Query 2: Consequently, we suggest not accounting for the project refrigerant, neither in the baseline nor in the project emissions. This would anyhow be a conservative approach, and would prevent from establishing specific monitoring measures which would not be easy to handle under a small scale project category context. Is this suggestion acceptable?

Response 2: No. As per decision of EB 34 (paragraph 17), the leakage/project emissions of all greenhouse gases, those included in Annex A of the Kyoto Protocol (KP) as well as those defined in paragraph 1 of the Convention (e.g. CFC, HCFC) should be accounted for, if the CDM project activity results in an increase in emissions of those gases. For that purpose all the greenhouse gases, defined in Annex A of KP as well as paragraph 1 of the Convention, should be included in the boundary of the project activity. Therefore, emissions of project refrigerants with a global warming potential (GWP) greater than zero shall be included in the boundary and analyses, if a proposed CDM project activity may result in leakage and/or project emissions of refrigerant gases that result in a net increase in CO_2(eq) emissions.

With respect to the equations addressing refrigerants in AMS-II.C, the SSC WG is planning to update these equations in the revision of the methodology.

Query 3: To determine project emissions, methodology AMS-III.X requires a monitoring of baseline refrigerators, with the same testing standard (e.g. ISO 15502) as for baseline. Is it possible, for this specific kind of appliance, to consider within the methodology AMS-II.C to monitor the baseline emissions according to the same testing standard (e.g. ISO 15502) that is used to determine the annual nameplate energy consumption of the project refrigerators?

Response 3: Yes, for the project as defined in the PDD provided by the author of the query it is appropriate to follow the procedures and requirements defined in AMS-III.X to determine project and baseline refrigerator energy consumption.

Signed by the Chair, Ms. Fatou Gaye Date: 02/02/2012 Signed by the Vice-Chair, Mr. Peer Stiansen Date: 02/02/2012	
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