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:	10–12 November 2008, SSC WG 18
Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):	Request for revision of AMS-II.C re energy efficient equipment containing refrigerants
Indicative methodology to which your submission relates (refer the items of Appendix B of the Simplified Modalities and Procedures), if applicable.	AMS-II.C
Name of the authors of the query:	Julie Godin / Adrien de Bassompierre / Javier Freire Coloma Institution: The World Bank Carbon Finance Unit jgodin@worldbank.org, adebassompierre@worldbank.org

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 Executive Board of the CDM approved at its 41st meeting a revised version of the small-scale methodology AMS.II.C. Section 3 of this revised version (version 10) specifies the following additional applicability condition:

"3. If the energy efficient equipment contains refrigerants, then it is ensured that the refrigerant used in the project case has lower GWP than the refrigerant used in the baseline equipment"

The restriction to use lower-GWP refrigerants in the project case than in the baseline will limit the access to small-scale energy efficiency projects in the air conditioning sector, because of the limited availability of alternative gases in this sector. Indeed, the majority of A/C units currently used in developing countries contain HCFC-22 (at 99%)[1][2]. The main available alternative gas for energy efficient A/C equipment, R-410A, has a higher GWP than HCFC-22—R-410A has a GWP of 2,088[3][4] and HCFC-22 has a GWP of 1,810[5]—and therefore cannot be used because they do not meet the new applicability condition. On the other hand, R-410A is characterised by a higher Coefficient of Performance[6] (COP, cooling

[1] ICF International, September 2007, *Assessment of HCFC-Based Air Conditioning Equipment and Emerging Alternatives Technologies.*

[2] The reference covered small air conditioning units, characterized by an average charge size of 2 kg and large air conditioning units, characterised by an average charge size of 11 kg (UNEP 2007D, IPCC/TEAP 2005).

[3] IPCC Fourth Assessment Report: Climate Change 2007.

[4] GWP from the Fourth Assessment report are used for all refrigerants listed for consistency in the comparative analysis.

[5] IPCC Fourth Assessment Report: Climate Change 2007.

[6] IPCC/TEAP, Special Report: Safeguarding the Ozone Layer and the Global Climate System: Issues related to hydrofluorocarbons and perfluorocarbons.

capacity) and the need of less refrigerant and electricity consumption in order to produce the same output. This is not true for other alternative HFC gases with lower GWP like R-407C (GWP of 1,774[7]) and HFC-134a (GWP of 1,430[8]) due to its lower COP.

Other alternative gases for energy efficient A/C units such as hydrocarbon refrigerants (e.g. HC-290) and carbon dioxide (R-744) would meet the new applicability condition since these gases are characterized by a lower GWP than HCFC-22. However hydrocarbon refrigerants and carbon dioxide are currently not commercially available and significant research and development efforts would be required prior to market distribution[9]. In the case of hydrocarbon refrigerants, it must be noted that safety concerns, handling, installation practices and field service skills and practices are factors that work against the application of the hydrocarbons refrigerant in air conditioning systems[10]. European and international standards generally limit the use of hydrocarbon refrigerants to applications that have a refrigerant charge smaller than 1 kg[11] for safety reasons.

Based on the analysis of available alternatives, the use of a refrigerant with lower GWP may often not be technically feasible or could simply not be optimal for reducing GHG emission reductions and limit the potential for demand-side energy efficiency projects in the air conditioning sector. Therefore we request that the Small-Scale Working Group consider withdrawing the applicability condition discussed above. Nevertheless, in order to ensure the environmental integrity of the CDM small-scale energy efficiency projects using this methodology, we suggest including additional requirements to ensure the appropriate recovery of the refrigerant contained in the existing equipment and used in the project activity. Refrigerant contained in the existing equipment shall be recovered and destroyed, or stored in conformity with regulations of the host country and/or pursuant to international treaties signed by the host country under Montreal, Kyoto or other Protocol that may in the future apply. Monitoring plan made available to DOE at validation shall include disposition for servicing equipment and end-of life recovery of refrigerant in agreement with regulations and best practices code adopted by the host country and/or pursuant to international treaties signed by the host country under Montreal, Kyoto.

Recommendation by the SSC WG:

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

Please refer to paragraph 7 of the meeting report of the SSC WG 18 (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.

In response to the submission, the SSC WG agreed to recommend a revision of AMS-II.C as contained in annex 4 of the SSC WG 18 report. The recommended revisions clarify the calculations of direct emissions from refrigerants with regard to equipment containing refrigerants. The revisions also clarify the consideration of capacity increase of the project equipment, electricity transmission and distribution (T&D) losses in the baseline and cross effects of lighting and heating.

[7] IPCC Fourth Assessment Report: Climate Change 2007.
[8] IPCC Fourth Assessment Report: Climate Change 2007.
[9] UNEP, 2006 TOC Refrigeration, A/C and Heat Pumps Assessment Report.
[10] UNEP, 2006 TOC Refrigeration, A/C and Heat Pumps Assessment Report.
[11] UNEP, 2006 TOC Refrigeration, A/C and Heat Pumps Assessment Report.

Signature of SSC WG Chair ……..

(Ulrika Raab)

Date: 12/11/2008

Signature of SSC WG Vice-Chair ……..

(Kamel Djemouai)

Date: 12/11/2008

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