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 March 2011, SSC WG 30
Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):	Clarification on the applicability of AMS-II.C to a project activity replacing multiple low efficiency equipment with a single high energy efficient equipment
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:	Institution: Ernst and Young, Kingdom of Bahrain dinesh.aggarwal@bh.ey.com, amjad.rihan@bh.ey.com

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:

Background

The project activity involves the replacement of inefficient decentralized 100 odd chilling/cooling units of smaller capacities varying between 5 Tons of Refrigeration (TR) to 200 TR capacity totalling around 25000 TR, with a central high energy efficient common chilling unit, for a process industry (covering all the sections such as process line, shop floor, offices, administration and other sections). The new centralized chilling unit will comprise of 5-6 chilling units of 5000 TR each (one stand by) and the total active capacity will be around 25,000TR.

At the central unit, the chilled water will be produced by high-efficiency water cooled electric-driven chillers and supplied to the outgoing Energy Transfer Stations (ETS's) installed in all the connected buildings. Each section in the manufacturing facility will have chilled water supply from the ETS through a network of pipes, supported by Air Handling Units (AHUs) for use in comfort cooling and process cooling, thus eliminating the need for separate systems in individual plants and buildings. To achieve feeding each building with the required chilled water to meet the users demand requirements, all the equipment in the central plant shall be controlled and monitored by a SCADA system located in the control room at the plant.

The common chilling unit consists of three primary components:

- Central cooling plant
- Distribution network
- Energy transfer stations

The reduction in electricity consumption and the associated greenhouse gas (GHG) emissions are anticipated on two fronts:

1) High efficiency of the new common chilling unit compared to the old ones
2) Better efficiency output due to the higher scale of operation for the common unit compared to the

individual smaller capacity chilling/cooling units.

Anticipated GHG emission reduction is expected to be within the prescribed limit of 60 GWh per year.

The refrigerant to be used in the project activity will be CFC free. Though there would be emission reductions on account of reduction in release of refrigerant, the PP will claim credits only due to the reduction in electricity consumption from use of more efficient equipment/appliance, in line with criteria #3 of the methodology. Also, the project emissions from the baseline refrigerant and/or project refrigerants shall be considered in accordance with the guidance of the Board (EB 34, paragraph 17).

Accordingly, the project activity may meets the methodology AMS-II.C (Ver 13) applicability criteria #1 (as it is adoption of energy-efficient equipment/appliance (air conditioners/chilling units) at many sites and the electrical energy savings will not exceed the equivalent of 60 GWh per year) and #3 (as the refrigerant used in the project case will be CFC free), however the clarification is sorted regarding applicability of criteria #2, as mentioned below:

#2. For each replaced appliance/equipment/system the rated capacity or output or level of service (e.g., light output, water output, room temperature and comfort, the rated output capacity of air-conditioners etc.) is not significantly smaller (maximum - 10%) than the baseline or significantly larger (maximum + 50%)[1] than the baseline.

Clarification is sorted from the Small-scale Working Group if the above condition is applicable to the project activity involving replacement of multiple low capacity low efficiency equipments, with common/ centralized high capacity high energy efficient equipment(s), where though it is not a case of one to one replacement, but the total rated capacities of the old system and the new system are equivalent.

Recommendation by the SSC WG:

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

Please refer to paragraph 29 of the meeting report of the SSC WG 30 <http://cdm.unfccc.int/Panels/ssc_wg>.

[1] Project activities involving increase in output level compared to the baseline scenario are only eligible if they comply with the related and relevant guidance in the "General Guidelines to SSC CDM methodologies" which require a demonstration that the baseline scenario for the increased amount of output is the same as the baseline scenario defined by this methodology. Otherwise, in the event project output in year *y* is greater than the average historical output (average of three most recent years +/-10%) before the implementation of the project activity, the value of the output in year *y* is capped at the value of the historical average output level.

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.

With respect to the specific question raised; as per paragraph 2 of AMS II.C , the "level of service" of the proposed project does not change, as described by the author in the project description , i.e. the amount of cooling capacity of this project's central plant is indicated to stay the same as the total cooling capacity of all the individual baseline chilling/cooling units. Therefore, as there is no change in the level of service requirement AMS-II.C could be applicable.

However, based on the information provided in the submission the SSC WG is of the opinion that AMS-II.C may not be applicable to the subject project for reasons other than the level of service provision. AMS-II.C is applicable to "…. activities that encourage the adoption of energy-efficient equipment/appliance (e.g. lamps, ballasts, refrigerators, motors, fans, air conditioners, pumping systems) at many sites." AMS-II.C is thus not specifically designed for centralizing of utility (cooling) provisions as is similarly addressed in the methodologies AMS-II.H "Energy efficiency measures through centralization of utility provisions of an industrial facility" and AMS-II.K "Installation of co-generation or tri-generation systems supplying energy to commercial building". AMS-II.C is designed for applications where many relatively small, individual pieces of equipment are replaced with many more efficient pieces of equipment.

As it stands now AMS-II.C does not provide provision to: (1) Conservatively determine a baseline EER taking into consideration the variable performance efficiencies of multiple baseline chilling/cooling units (taking into consideration auxiliary loads such as cooling towers and chilled water circulating pumps); and (2) Demonstrate what the baseline scenario is, taking into consideration issues such as remaining life of the baseline equipment. With these two issues, it may be that a new methodology for centralizing of cooling utilities, without the use of co-generation or tr-igeneration, would be needed. The provisions of AMS-II.H and AMS-II.K can be the start of such a methodology.

Signed by the Chair, Ms. Fatou Gaye

Date: 18/03/2011

Signed by the Vice-Chair, Mr. Peer Stiansen

Date: 18/03/2011

Information to be completed by the secretariat	
SSC-Submission number	SSC_510
Date when the form was received at UNFCCC secretariat	18 March 2011
Date of transmission to the EB	18 March 2011
Date of posting in the UNFCCC CDM web site	18 March 2011