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:	24–27 February 2009, SSC WG 19
Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):	Clarification on thermal energy production capacity of cogeneration project activity using AMS-I.C
Indicative methodology to which your submission relates (refer the items of Appendix B of the Simplified Modalities and Procedures), if applicable.	AMS-I.C version 13
Name of the authors of the query:	Emmanuel Y. Gaspar Institution: Bataan 2020, Inc. eyg@bataan2020.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 PP:

The purpose of the project activity is to generate steam and electricity using rice hulls as fuel in the 12.5 MW cogeneration plant. The project activity involves Atmospheric Fluidized Bed Combustion (AFBC) technology for steam generation coupled with an extraction cum condensing steam generator system for electricity generation. The cogeneration plant will be fueled with rice hulls and will directly reduce greenhouse gas (GHG) emissions with the displacement of fossil fuel based grid electricity. About 27,013 tCO2e in emission reductions is expected each year.

The project activity uses AMS I.C. version 13. The methodology states the following:

"Cogeneration projects that displace/ avoid fossil fuel consumption in the production of thermal energy (e.g. steam or process heat) and/or electricity shall use this methodology. The capacity of the project in this case shall be the thermal energy production capacity i.e., 45 MWth."

The cogeneration project is a single system. This system has a maximum production capacity of 12.5 MW of electricity and 30 tph of steam for process requirements. The system cannot produce more than 30 tph of steam for process. Kindly refer to the heat balance diagram as a supporting document. In such a scenario the capacity can be calculated as the sum of useful energy generation by the project (electrical + heat) as follows:

Electricity output = 12.5 MW
Electricity output of system = 10750000 kcal/hr
Using a conversion factor of 1kW = 860 kcal/hr
Steam output to process =30 tph
Process Steam enthalpy = 667 kcal/kg
Therefore thermal output of system = 30*(667)*1000
=20011200 kcal/hr

Total output of system = 10750000 + 20011200
= 30761200 kcal/hr
=30361200/860 kWth
=35.78 MWth

We wish to begin validation but one DOE has said that the methodology does not apply because the installed capacity of the boiler is higher than 45 MWth:

Steam output from boiler =74.5 tph
Steam enthalpy = 810.4 kcal/kg
Feed water enthalpy = 176.9 kcal/kg
Therefore output of boiler = 74.5*(810.4-176.9)*4.186/3600
= **54.87 MWth**

However this does not reflect the thermal energy *production* capacity of the cogeneration system, and so is not in accordance with the wording or aim of the methodology.

Recommendation by the SSC WG:

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

Please refer to paragraph 5 of the meeting report of the SSC WG 19 (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.

The current version of AMS-I.C states "Cogeneration projects that displace/ avoid fossil fuel consumption in the production of thermal energy (e.g. steam or process heat) and/or electricity shall use this methodology. The capacity of the project in this case shall be the thermal energy production capacity, i.e. 45 MWth."

The SSC WG noted that this is a biomass based multiple-extraction condensing turbine that generates 12.5 MW of power and provides 30 ton/h of steam for the process. In addition to process heating, the heat balance diagram shows that other amounts of heat from the condensing turbine are used in HP heater, in the De-aerator and the LP heater.

The SSC WG agreed energy generation capacity shall be manufacturer's rated energy output, or if that rating is not available, the energy generation capacity, for example, in the case of boiler it shall be determined by taking the difference between total enthalpy of the output streams and the enthalpy of input stream. The SSC WG agreed when either of the approaches is adopted, the rated/installed capacity of the proposed cogeneration project exceeds the capacity limits applicable to a AMS-I.C project (approach (a) 12.5 x 3 + 20011200/860=60.8 MW thermal, and approach (b) 54.87 MW thermal capacity as shown in the submission).

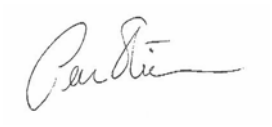
The SSC WG agreed to recommend a revision of AMS-I.C as contained in annex 2 of the SSCWG 19 meeting report. The recommended revisions include additional guidance on estimating the capacity of a cogeneration unit and results in expanded applicability of the methodology for biomass based heat and/or power generation project activities (including cogeneration) that supply: (a) electricity to a grid and/or displace grid electricity or both; (b) electricity and/or thermal energy for on-site consumption or for consumption by other facilities, and combination of (a) and (b).

If the revisions are approved by the Board, the project proponent may evaluate if the proposed project activity is covered by the revised version.

Signature of SSC WG Chair ……..

(Hugh Sealy)

Date: 27/02/2009



Signature of SSC WG Vice-Chair ……..

(Peer Stiansen)

Date: 27/02/2009

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