



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)

<i>Date of SSC WG meeting:</i>	16–19 August 2010, SSC WG 27
<i>Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):</i>	Revision to include a stepwise procedure on baseline efficiency determination for a new cogeneration system
<i>Indicative methodology to which your submission relates (refer the items of Appendix B of the Simplified Modalities and Procedures), if applicable.</i>	AMS-IC “Fuel Switch, process improvement and energy efficiency in brick manufacture”
<i>Name of the authors of the query:</i>	Vikas Thakur Institution: Indus Technical And Financial Consultants Ltd. vikasrjn@rediffmail.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 Stakeholder:

According to clarification SSC_407 regarding determination of efficiency of a new cogeneration system, SSC WG agreed to include the detailed step wise procedure for calculating the baseline efficiency of a new cogeneration system from the component's efficiencies. The step wise procedure for determination of baseline efficiency of a new cogeneration system based on the best individual efficiency of each component manufactured separately by independent manufacturer or by one single manufacturer is given as follows:

Revision proposed in para 18 of ASM IC:

1. Efficiency of the baseline units shall be determined by adopting one of the following criteria (in a preferential order):
 - (a) Highest of the efficiency values provided by two or more manufacturers for units with similar specifications, using the baseline fuel or calculated efficiency of the cogeneration system based on the highest of efficiency values provided by two or more independent manufacturer for boiler and STG (steam turbo generator) with similar specification used in the cogeneration system; determined in the following manner:

Efficiency of cogeneration system depends upon the efficiency of boiler and efficiency of STG, the manufacturers of the both the above components may be one or may be different; hence it is appropriate to use the highest efficiency value provided amongst two or more independent manufacturers for boiler and STG with similar specification and determine the overall efficiency of cogeneration system by combination of the best efficiency of these two system individually from different manufacturers, in the following manner:

Step-1: Identification of best efficient boiler between two or more manufacturers with similar specification using baseline fuel as certified by the Manufacturer/Chartered Engineer. Or this can be assessed in terms of % energy efficiency by considering the total baseline fuel energy combusted with the total steam energy provided in the appropriate unit.

Step-2: Identification of best efficient STG between two or more manufacturers with similar specification of useful thermal energy output and electrical energy output as certified by the Manufacturer/Chartered Engineer. Or this can be assessed in the following manner:

Determination of efficiency of Steam Turbo Generation system (STG) from different manufacturers:

- (i) Electrical Energy output (in appropriate unit)
- (ii) Maximum useful thermal energy output in terms of extracted steam (in appropriate unit)
- (iii) Total maximum useful energy output (Useful Thermal energy + Electrical energy) from the cogeneration system i.e. STG (in appropriate unit)
- (iv) Total steam energy input required in to the STG system for giving the above useful thermal energy + Electrical energy output.
- (v) Efficiency of the STG System can be calculated in % as below:

$$\frac{\text{Total maximum useful energy output (useful thermal energy + electrical energy)}}{\text{Total steam energy input in to the STG system}} \times 100$$

Step-4: Calculation of Best efficiency of cogeneration system

$$n_{BL} = \frac{[\text{Total maximum useful energy output (Useful Thermal energy + Electrical energy) in TJ from the cogeneration (STG) / Lowest calculated Fuel energy (TJ) required in cogeneration system (based on highest efficient boiler and highest efficient STG)] \times 100}{\text{Total steam energy input in to the STG system}}$$

Or

% efficiency of best efficient Boiler X % efficiency of best efficient STG.

(b) Highest measured operational efficiency over the full range of operating conditions of a unit with similar specifications, using baseline fuel. The efficiency tests shall be conducted following the guidance provided in relevant national / international standards;

(c) Default efficiency of 85% (based on default boiler efficiency 85%¹ / STG efficiency 100%)

(Revised Methodology is attached with this form)

¹ Tool to determine the baseline efficiency of thermal or electrical energy generation system, version-01, EB-48, Annex-12, Table-1 page No.7.

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 27
(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 SSC WG agreed to recommend a revision of the methodology, as contained in annex 2 to include a procedure for determining baseline efficiency for a new cogeneration system and where subsystem equipment are provided by different manufacturers.

Signed by the Chair, Mr. Peer Stiansen

Date: 19/08/2010

Signed by the Vice-Chair, Mr. Hugh Sealy

Date: 19/08/2010

Information to be completed by the secretariat

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