



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>	26–29 April 2010, SSC WG 25
<i>Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):</i>	Clarification on the options for calculating the baseline and project emissions under AMS-I.C
<i>Indicative methodology to which your submission relates (refer the items of Appendix B of the Simplified Modalities and Procedures), if applicable.</i>	AMS-I.C “Thermal energy production with or without electricity”
<i>Name of the authors of the query:</i>	Mohua Banerjee De Institution: CantorCO2e mbanerjeede@cantorco2e.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:

We put forward the query below, with a description of the project activity:

The project:

Our client has five numbers of Hot Air Generators (HAG) at their manufacturing unit. In the pre-project scenario, all of them were operating on Furnace oil (FO). Due to rise in FO price they decided to change the fuel. Though using coal as fuel was the most economically attractive option, they decided to shift to bio-mass based operation based on CDM revenue. Hence the baseline scenario is coal based operation and project activity is bio-mass based operation of Hot air generators.

The investment decision of changing to bio-mass based operation for all five HAGs was taken together in 2006. The project implementation is spread over past few years and during the submission of the PDD, four HAGs were already converted to bio-mass based operation and one HAG conversion is yet to be done. The same one is continuing on FO and due for conversion within next one or two years.

Thus the project is under implementation stage and the above conditions are summarised below in tabular form:

<i>Equipment</i>	<i>Pre-project fuel</i>	<i>Baseline fuel</i>	<i>Project activity fuel</i>	<i>Current status</i>
HAG 1	Furnace Oil	Coal	Bio-mass	Conversion completed, operating on bio-mass
HAG 2	Furnace Oil	Coal	Bio-mass	Conversion completed, operating on bio-mass
HAG 3	Furnace Oil	Coal	Bio-mass	Conversion completed, operating on bio-mass

HAG 4	Furnace Oil	Coal	Bio-mass	Conversion completed, operating on bio-mass
HAG 5	Furnace Oil	Coal	Bio-mass	Conversion yet to be done, operating on Furnace oil

Emission reduction calculations:

As per applicable methodology AMS IC (version 16), the baseline emission is calculated using the following equation:

$$BE_{thermal,CO_2,y} = (EG_{thermal,y} / \eta_{BL,thermal}) * EF_{FF,CO_2}$$

Where:

$BE_{thermal,CO_2,y}$	The baseline emissions from steam/heat displaced by the project activity during the year y; tCO ₂ e
$EG_{thermal,y}$	The net quantity of steam/heat supplied by the project activity during the year y; TJ
EF_{FF,CO_2}	The CO ₂ emission factor of the fossil fuel that would have been used in the baseline plant; tCO ₂ / TJ, obtained from reliable local or national data if available, otherwise, IPCC default emission factors are used
$\eta_{BL,thermal}$	The efficiency of the plant using fossil fuel that would have been used in the absence of the project activity

Project Emissions

The project emission for HAGs operating on bio-mass is considered as zero.

The CO₂ emissions from ‘on-site consumption of fossil fuels’ due to furnace oil consumption in unconverted HAG 5 is calculated using the latest version of “Tool to calculate project or leakage CO₂ emissions from fossil fuel combustion” as given below:

$$PE_{FO,y} = FC_{FO,y} * NCV_{FO,y} * EF_{CO_2,i,y}$$

Where

$PE_{FO,y}$ = Are the CO₂ emissions from furnace oil combustion in HAG 5 in the year y (tCO₂/yr)

$FC_{FO,y}$ = Is the quantity of furnace oil combusted in HAG 5 during the year y (mass or volume unit/yr);

$NCV_{FO,y}$ = Is the net calorific value of the furnace oil in year y (GJ/mass or volume unit)

$EF_{CO_2,i,y}$ = Is the CO₂ emission factor of fuel type i in year y (tCO₂/GJ)

The Query:

As the HAG 5 is not expected to get converted before the first verification of this project, we understand it's emission due to operation on FO during this period should be considered as project emission. We are concerned about the calculation of CER for this particular equipment (HAG 5) during the period before conversion to biomass.

We have the following four options for calculating baseline and project emission during this period for HAG 5:

Option 1:

For baseline emission calculation, EF_{FF,CO_2} = emission factor of coal (since coal is baseline fuel)

For project emission calculation, $EF_{CO_2,i,y}$ = emission factor of furnace oil (since the HAG5 continues to operate on furnace oil)

Due to difference in emission factors, this option results in gaining CERs without conversion to bio-mass based operation. Hence this is not conservative.

Option 2:

For baseline emission calculation, EF_{FF,CO_2} = emission factor of coal (since coal is baseline fuel)

For project emission calculation, $EF_{CO_2,i,y}$ = emission factor of coal

Though the HAG5 actually operates on Furnace oil, consideration of emission factor of coal would nullify the CERs as if the equipment is not included in the project boundary until converted. This is also conservative.

Option 3:

For baseline emission calculation, EF_{FF,CO_2} = emission factor of Furnace oil (only for HAG 5, rest of the converted HAGs would continue to use coal emission factor in the baseline calculation)

For project emission calculation, $EF_{CO_2,i,y}$ = emission factor of furnace oil (since the HAG5 actually operate on furnace oil until converted to bio-mass)

Though the baseline is coal, consideration of emission factor of furnace oil would nullify the CERs as if the equipment is not included in the project boundary until converted. This is also equally conservative as option 2.

Option 4:

Keep HAG5 out of project boundary for emission reduction calculation until converted. This is mentioned in the description of project activity. The additionality demonstration calculation would include this equipment's estimated cost and benefit to avoid revisit to additionality demonstration during verification. The monitoring report would include the CERs from this equipment from the date of conversion. The DOE would present it as a deviation in his validation report.

Kindly clarify which of the above mentioned option to be adopted for our project activity which is under implementation stage.

We confirm that for other four HAGs, which are already converted, we would be using emission factor of coal for baseline emission calculation and project emission due to fossil fuel consumption in HAGs would be considered as nil.

Recommendation by the SSC WG:

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

Please refer to paragraph 35 of the meeting report of the SSC WG 25 (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 clarify that in the case of a project activity involving fuel switch from fossil fuel to renewable biomass in existing facilities, historical information on the use of energy sources (e.g., electricity, fossil fuel) and the plant output (e.g., steam or electricity) from at least 3 years prior to project implementation shall be used in the baseline calculations. For facilities that are less than 3 years old, all historical data shall be available (a minimum of one year data would be required). Therefore using a hypothetical emission factor of coal for an existing facility using furnace oil is not appropriate and thus all the four options provided in the query by the project participant is not acceptable.

Please note that additional guidelines for project activities involving fuel switch from fossil fuel to biomass in thermal generating equipment has been provided in the recommended version of AMS-I.C (see paragraph 7 of the SSCWG 25 report).

Signed by the Chair, Mr. Peer Stiansen

Date: 29/04/2010

Signed by the Vice-Chair, Mr. Hugh Sealy

Date: 29/04/2010

Information to be completed by the secretariat

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