CDM: Form for Submissions on Small Scale Methodologies and Procedures (version 03)

(To be used for presenting questions/proposals/amendments related to the simplified methodologies for small-scale CDM project activity categories)

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Affiliation[1]:	☐DNA ☐DOE ☐PP ☒Stakeholder
Title/Subject (max. 200 characters):	Calculation of baseline emission and project emission in a WHRB project activity installed along with a coal fired AFBC.
Purpose of the submission:	☐ Query on an approved SSC methodology or small scale procedures[2] (Fill in field 1. below) ☒ Request for Revision of an approved SSC methodology (Fill in fields 2. and 3. below) ☐ Proposal for a new SSC methodology (Fill in fields 4. and 5. below)
Approved SSC methodologies[2] to which your submission relates to, if applicable.	AMS III.Q Ver-03
Contact Information (e-mail addresses to which the answers are to be delivered and phone contacts for possible dialogue on the submission).	lks1954@rediffmail.com

Information for completing the form

Describe the questions related to the SSC Methodologies, Modalities and Procedures below. If the questions are related to a project under development or implementation, you may describe the context in which they arose.

Query on an approved SSC methodology or SSC procedures

1. If you have questions relating to the application of an approved small-scale methodology (AMS) please specify and provide reference to the exact technology/measure below. If you have questions related to procedures for SSC project activities please clarify below:

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Request for revision of an approved SSC methodology

[1] Designated National Authority (DNA); Designated Operational Entity (DOE); Project Participant (PP), and Stakeholder.

[2] The list of all approved small-scale methodologies (AMS) can be found at http://cdm.unfccc.int and go to CDM: small scale CDM methodologies.

2. If you are proposing an amendment/revision to an approved small-scale methodology (AMS), please provide justifications below:

>> **Background of the Methodological issues and Sources of confusion in AMS III.Q:**

(a) AMS III.Q ver-03 Para 9 (a) read as *"Baseline emissions from electricity ($BE_{elec,y}$) **generated** by waste energy (e.g., waste pressure):*

(b) Whereas, after the equation (1) $BE_{elec,y}$ is defined as *Baseline emissions due to **displacement** of electricity during the year y in tons of CO_2*

(c) Whereas, $EG_{i,j,y}$ is defined as "*The quantity of electricity **supplied** to the recipient j by generator, that in the absence of the project activity would have been sourced from i^{th} source (i can be either grid or identified source) during the year y in MWh, and*

(d) At the same sequence f_{wcm} is defined as *"Fraction of total electricity generated by the project activity using waste energy*."

1. Kindly note that there are three different words (terms) used in this methodology for the same purpose of electricity generation or for the same parameter electricity generation i.e. ***generated, displacement, supplied,*** the fundamental confusion is caused in the mind of most of the DOE; due to these three different terms used for the same purpose at different places; and in-spite our best efforts we are unable to clear the same. Hence the request for suitable clarification in the methodology is requested.
2. **At page 1 it is mentioned in "Technology/measure:**
    1. The category is for project activities that utilize waste gas and/or waste heat at existing facilities[3] as an energy source for:
        (a) Cogeneration; or
        (b) Generation of electricity; or"
    1.
3. The para 6 (d) reads as *"The emission reductions are claimed by the **generator** of energy using waste energy"*;
4. The equation provided to calculate $BE_{elec,y}$ is $BE_{elecy} = f_{cap} * f_{wcm} * \sum_j \sum_i (EG_{i,j,y} * EF_{Eleci,j,y})$ .....**(1)**
5. In the methodology project emission is described as at para**:**
    2. **14.Project emissions**
    Project Emissions include emissions due to combustion of auxiliary fuel to supplement waste gas and ***emissions due to consumption of electricity by the project activity***.
6. In the methodology project emission Calculation to be done is described at para 21 as given below:
    21. For project emissions determination, the "Tool to calculate project or leakage CO_2 emissions from fossil fuel combustion" and the "Tool to calculate baseline, project and/or leakage emissions from electricity consumption" shall be used.

[3] *A facility that is existing on the starting date of the project activity (see definition in para. 67 of the EB 41 meeting report) and all options for demonstrating the use of waste energy in the absence of a CDM project activity shall be based on historic information and not on a hypothetical scenario*.

On going thru the above methodological provisions it is clear that the methodology also applies to a facility in which the Project activity is being a part of the larger CPP. In which the steam generated by the Project Activity is contributed for power generation through the common facility. These common facility in Power Plants have the common facilities to generate power and for which common auxiliary are installed which consume power to run the CPP, within which the Project Activity also being a part of the CPP requires to assess the proportionate auxiliary power consumption by Multiplying the f_{wcm} with the total auxiliary power consumed by the CPP. In view of these facts the notation used to define the Parameters require some clarity as suggested below:

A. $EG_{i,j,y}$ = is the monitored parameter (it is not a calculated parameter) indicating the Gross Power generation from the entire CPP and it is not the "Net power supplied by the Project Activity" to the facility. Hence it's definition requires to be changed.
B. Since the f_{wcm} is multiplied with the $EG_{I,j,y}$ and $EF_{elec,i,j,y}$ is also multiplied in one single equation hence the *BEy* is directly obtained.
C. Since the para 14 of the methodology requires to calculate the Project emission based on the provisions given in Para 21, thus the Tool is required to be applied for the assessment of the suitable options applicable to calculate the Project emission. In view of this the following parameter becomes an essential parameter to be monitored for the determination power consumed by the Power Plant itself. Since technically it is not possible to directly monitor the net power supplied by the Power Plant after deducting from the auxiliary consumption. Therefore the auxiliary power consumption is separately monitored and the proportionate auxiliary power is calculated by multiplying with $f_{wcm.}$ The received figure is then multiplied with the Calculated Factor which is derived by selected Emission Factor as per tool and in which the leakage percentage is added. Thus the monitoring of the following parameter becomes essential:

EG_{AUX}	:	*The total power consumed in the CPP to operate the power plant auxiliaries*
$FF_{el,j,y}$	:	*Emission factor for electricity generation system for source "j" in year y (tCO2/MWh)*
$TDL_{j,y}$	:	*Average technical transmission and distribution losses for providing electricity to source j in year y*

$$\sum_{j} EC_{PJ,j,y} = EG_{aux,y} X f_{wcm}$$

Based on the above monitored and calculated parameters as per the tool the Project mission is calculated in the Following Manner:

$$PE_{EC,y} = \sum_{j} EC_{PJ,j,y} \times EF_{EL,j,y} \times (1 + TDL_{j,y})$$

(i) *As per the above discussion the following is established that the parameter $EG_{i,j,y}$ definition requires correction as discussed below.*

(ii) *The Project emission requires to be calculated separately as required in the Monitoring plan of methodology, hence the Total Auxiliary power consumption has to be monitored in the CPP and to arrive at the Proportionate Auxiliary consumption by the Project activity requires to be multiplied by the f_{wcm}; this calculated output is to be treated as $\sum_{j} EC_{PJ,j,y}$ for the calculation of the emission reduction. In view of this following clarification or changes are requested in the methodology.*

The definition of the $EG_{i,j,y}$ as given in the methodology as:

$EG_{i,j,y}$ The quantity of electricity **supplied** to the recipient *j* by generator, that in the absence of the project activity would have been sourced from i^{th} source (i^{th} can be either grid or identified source) during the year *y* in MWh, and
The definition of the $EG_{i,j,y}$ as propose in the methodology

Proposed revision:

$EG_{i,j,y}$ The quantity of gross electricity supplied by the gross electricity generation from CPP (which includes the power generation due to project activity within the CPP)[4] which would be supplied to the recipient j[5] by generator.

The quantity of electricity that in the absence of the project activity would have been sourced from i^{th} source (i can be either grid or identified source) during the year y in MWh, would be determined through calculation by multiplying the fraction of the waste energy contributed by the Project activity to the total energy consumed in CPP, this will be done by multiplying f_{wcm} with $EG_{i,j,y}$. Wherein the value of f_{wcm} will be "one" if the entire CPP power is generated only by the waste heat recovery boiler(s) (i.e Project Activity) and

In case the CPP comprises of coal based AFBC(s) and also the WHRB(s) as source of steam then the same will be used by applying f_{wcm} as per the calculation given below:

Clarifications requested for the determination of the Project Emission caused due to the consumption of electricity b y the Project activity is as given below:

Project emissions

14. *Project Emissions include emissions due to combustion of auxiliary fuel to supplement waste gas and emissions due to consumption of electricity by the project activity.*
15. *If the waste gas contains carbon monoxide or hydrocarbons, other than methane, and the waste gas is vented to the atmosphere in the baseline situation, project emissions have to include CO_2 emissions due to the combustion of the waste gas.*

REVISION PROPOSED

Project emissions

14. (a) Project Emissions include emissions due to combustion of auxiliary fuel to supplement waste gas and emissions due to consumption of electricity by the project activity.

(b) Project Emissions due to consumption of electricity by the project activity will be determined by applying $f_{wcm.}$

f_{wcm} will be "one" if the entire CPP power supplied is generated only by the waste heat recovery boiler(s). In case the CPP comprises of coal based AFBC(s) and also the WHRB(s) as source of steam then the same will be used by applying f_{wcm} as per the calculation given in previous paragraphs.

3. If you are proposing an amendment/revision to an approved small-scale methodology (AMS) please provide the draft methodology with changes highlighted.

The following documents have been attached to this form:

- ❑ Draft methodology with changes highlighted in Word and PDF formats
- ❑ PDD in PDF format (optional)
- ❑ Additional information (please specify if you are providing any information note, published paper or a report in support of the request for revision of the SSC methodology)

[4] It is clarified here that the Gross Electricity generation equals to the Electricity supplied because the Auxiliary power consumption has to be monitored separately and deducted as project emission, as per the Provisions in the methodology.

[5] The term recipient "j" would mean the entire quantity of electricity that is supplied to the Industrial facility within which the auxiliary power consumption by the CPP are also included, the Project emission calculation due to the Auxiliary power consumption in CPP will be determined as per para 21 and the proportionate emission by the Project activity will be arrived by multiplying the same with f_{wcm}

Proposal for a new SSC methodology	
4. If you are proposing a new small scale methodology, please provide justifications below:	
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5. For submitting a new small scale methodology a filled in form "CDM: form for proposed new small scale methodologies (F-CDM-SSC-NM)" is required.	
The following documents have been attached to this form: ❑ Completely filled in form "CDM: form for proposed new small scale methodologies (F-CDM-SSC-NM)" in Word and PDF formats[6] ❑ A draft PDD (with sections A to C completed): o Relevant annexes to the PDD are provided ❑ Additional information (please specify if you are providing any information note, published paper or a report in support of the new SSC methodology)	
Date you are delivering the contribution:	28/03/2011
Information to be completed by the secretariat	
SSC-Submission number	

[6] The current version of the form (F-CDM-SSC-NM) is available on the UNFCCC CDM website (http://cdm.unfccc.int).