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:	10–12 November 2008, SSC WG 18
Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):	Revision for energy efficiency projects that reduce steam consumption
Indicative methodology to which your submission relates (refer the items of Appendix B of the Simplified Modalities and Procedures), if applicable.	AMS-II.D version 11
Name of the authors of the query:	Henning Thiel Institution: EcoSecurities plc Henning.Thiel@ecosecurities.com, Jessica.Wade@ecosecurities.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:

The request for revision proposes to expand AMS-II.D to cover adequately projects where the emission reductions are measured by comparing energy use before the project activity, measured in terms of specific energy consumption, with measured energy use during it. The motivation for the revision is energy efficiency projects that reduce steam consumption. The revision proposes the following: (a) changes to measure emission reductions in a new way in addition to the existing way, (b) a means to ensure that the level of service does not change from the baseline to the project, (c) a way to monitor steam energy use, for projects that reduce steam consumption, and (d) guidance on determining the emission factor for steam.

(a) New method to measure emission reductions

Emission reductions can be measured by comparing energy use during the project year (measured) with baseline energy use reconstructed using the baseline specific energy consumption (in energy per unit product output) and the product output of the year *y* (see new para. 8). The main benefit of this method is that it allows the methodology to focus on efficiency improvements in one sub-system of a larger facility, where it would be more difficult to extricate the impact of the efficiency measures by looking only at the upstream energy sources. This method also introduces a new monitoring requirement for those projects that choose to use it; the production output Py must be monitored (new para. 13c).

(b) Ensuring the level of service does not change from the baseline to the project

For energy efficiency projects where emission reductions are measured indirectly, it is necessary to ensure that the level of service does not change between project and baseline; in other words, the project has to do the same "work" as the baseline. This requirement is fulfilled when characteristics of the output from the more efficient facility or sub-system remain the same before and after project implementation.

This is true for both the primary product stream and secondary streams, with the primary stream being the main concern.

The revision proposes an indirect way to determine emission reductions (new para. 8), but only where production outputs in baseline and project scenario remain homogenous and within a range of ±10% with no change in installed capacity (new para. 2) (same as AMS-II.I v 1 para. 2c). This requirement means that the primary product stream must remain the same within a reasonable range of variability and ensures that the level of service does not change between the project and baseline.

Secondary streams are managed in the leakage section. These constitute, for example, condensate return, by-products, and other such outputs of the facility or sub-system. If one of these streams is an energy source, any change in its supply could affect emissions levels. For example, if the condensate from a sub-system is used as feed water for boilers, and steam efficiency reduces the energy returned in condensate, then the PP should consider how that energy will be compensated. The leakage section now requires that such effects of the project activity must be described, and if the effects may lead to emissions increases, leakage is to be considered (new para. 12). This will require PPs to identify and address any emissions changes outside the project boundary.

(c) Monitoring steam energy use, for projects that reduce steam consumption

Projects that reduce steam consumption in a facility or sub-system can measure the energy in steam by directly measuring steam flow(s), and determining steam enthalpy (new para. 13b). Using these data, the steam energy is calculated. This is the most commonly used approach to calculate steam energy. For a project that reduces steam consumption, all steam energy inputs into the facility or sub-system must be considered; however, this is already required according to existing para. 2 and 9b (now 3 and 13b), which instructs PPs to meter "the energy use of the industrial or mining and mineral production facility, processes or the equipment affected by the project activity."

(d) Determining the emission factor for steam

When the energy savings takes the form of steam from a boiler and/or a co-generation plant, it is proposed that the emission factor for steam be defined as emissions per unit steam energy, and that the same emission factor be applied to all steam energy (new para. 10). This provides a simple approach that can be applied consistently even when steam of different qualities is utilized within the project boundary. The emissions factor for steam will therefore be the emissions factor for fuel energy used to create the steam (in kg CO2e/kWh), divided by the boiler efficiency, to get kg CO2e/kWh steam energy. It is proposed that a conservative default boiler efficiency of 90% should be applied to calculate the emission factor in all cases, except in the case of a new boiler where it should be 100%.

(e) Other changes

The "equations" describing the application of DATEBaselineRetrofit were deleted, because they do not provide any new information as compared to the preceding paragraphs and are therefore repetitive.

Recommendation by the SSC WG:

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

Please refer to paragraph 10 of the meeting report of the SSC WG 18 (http://cdm.unfccc.int/Panels/ssc_wg).

Answer to authors of query by the SSC WG:

The small-scale working group of the CDM Executive Board would like to thank the author for the submission.

The SSC WG noted several issues in the proposed revision, which are not sufficiently addressed such as the below:

- Please substantiate how project activity will lead to reduction of steam energy consumption. It is noted that a backpressure turbine or pressure reducing device will be implemented to reduce temperature/pressure of steam. It is not clear how this will lead to reduction of steam output in the main steam generators leading to reduction in fossil fuel consumption. In the case of deploying the backpressure turbine, please substantiate how the incremental electricity generated via the back-pressure turbine replaces steam that would have been generated in the captive plant and thus would result in the reduction of steam generation.
- There is no clear procedure in the proposed revision about establishing a benchmark specific energy consumption value (ratio of process output to steam energy consumption). The project proponent may wish to follow elements from AMS-II.I to establish such. As an example, **a** specific energy consumption value (ratio of process output to steam energy consumption) may be established based on most recent three years average historical data.
- How it can be ensured that there is no increase in electricity consumption, which would be provided to the grid, as emission reduction is claimed only for steam component. The project proponent may consider to include as additional applicability condition such as "In case where any one of the eligible components is developed as a small scale CDM project activity, the rest of the components shall be transparently described in the PDD, included in the boundary and monitored as required by the procedures although no emission reductions are claimed from these components".
- When the baseline energy use is allowed to vary based on product output there needs to be consideration of what factors need to be considered as the independent variables that determine what a baseline energy use would have been. These may include number of units produced, weight of units, volume of units, type of units, quality of units, etc.
- It is not clear about the term "energy use " in the proposed paragraph 7 whether it is fossil fuel use or heat or electricity. Clarification is important since once a methodology is approved it has to be universally applicable.
- The proposed paragraph 7 defines ECbaseline as historical when there is no 'historical' value for new construction projects. Clarification needed on when and how specific energy consumption factors can be used.
- Changing composition of input-ore may have considerable impact on the energy use within the project boundary. The project proponent may consider including additional applicability conditions to address this issue.

The SSC WG is of the opinion that a new methodology should be proposed to better address the concerns raised above considering the elements of AMS-II.D and AMS-II.I. **The issues above are only examples and may not cover all the uncertainties in the proposal or a future methodology.**

Signature of SSC WG Chair ……..

(Ulrika Raab)

Date: 12/11/2008

Signature of SSC WG Vice-Chair ……..

(Kamel Djemouai)

Date: 12/11/2008

Information to be completed by the secretariat	
SSC-Submission number	SSC_243
Date when the form was received at UNFCCC secretariat	12 November 2008
Date of transmission to the EB	12 November 2008
Date of posting in the UNFCCC CDM web site	12 November 2008