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:	21–24 September 2009, SSC WG 22
Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):	Revision of AMS-I.C to include monitoring of thermal energy output of household-biogas stoves
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 15
Name of the authors of the query:	Mr. Jari Hiltunen Institution: Gaia Consulting Oy jari.hiltunen@gaia.fi

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:

AMS-I.C. methodology considers emissions reductions according to the thermal energy produced by the project equipment derived from renewable biomass that displaces fossil fuel. However, AMS-I.C. does not exclusively define how the net quantity of heat (EGthermal) supplied by the project activity will be determined.

For the case of the project presented in attached PDD, the most feasible and economically viable alternative to estimate thermal energy from project equipment (household size biogas digesters) is through known quantities of swine manure, using IPCC default values, produced in the participating farms which is fed directly into the digesters to produce methane. On the other hand methodology AMS-III.R. is used in combination with AMS-I.C. to define the emission reductions due to manure management changes (anaerobic digestion, methane recovery and combustion).

Nonetheless, it is common that biogas will not be produced only from swine manure in household size digesters. In fact, in said project, approximately 20-40 % of the biogas production, depending on swine population calculated using IPCC default values in the baseline, will be generated from other type of biomass (i.e. installation includes so called Three Improvements System (piggery, kitchen, sanitary system)) being fed into the biogas digesters. The measurement of biogas flow, temperature and methane content is not a feasible alternative and the metering of the amount of more than one type biomass is not plausible.

Thus, the only realistic and credible alternative to verify the net quantity of thermal energy supplied by the project activity using renewable biomass (i.e. biowaste and manure), is to estimate the reduction of coal consumption (the displaced fossil fuel used for cooking purposes only) by a sample of the systems during project activity.

This amendment to monitoring methodology AMS-I.C. v.15 requests that emissions reductions are

calculated in accordance to the displacement in the use of fossil fuel thanks to biogas production itself. Coal is the sole heating source for cooking utilised by the participating communities and the consumption of coal is specified ex ante using survey method and its consumption during project activity can be easily and accurately recorded by a sample of the systems once the project is operational.

The proposed amendment can also be considered as a conservative approach due to the fact that the other organic matter from agricultural activities, that would be decaying anaerobically emitting methane to the atmosphere in the absence of the project activity, is not considered in the baseline. However, the soil application of the final sludge during project activity will be monitored.

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 22 (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 not to recommend the revision as savings in coal consumption is associated with many uncertainties that are beyond the control of the project participant (coal price, supply, regulations, coal quality such as moisture, NCV, household occupancy etc.). However, the group also recognizes the difficulties in monitoring the amount of feedstock fed into the digester and quantity of biogas produced.

The SSC WG is therefore considering recommending default factors for bio-digesters with cookstoves at household level and would like to invite the project participant to provide inputs based on monitored data and/or independent research to develop these default factors. The form of the default factors could be emission reduction per appliance or methane production per appliance as a function of household occupancy or system capacity. Therefore, information on the following aspects would be very useful:

- The (annual) biogas output in volume and methane percentage depending on the capacity of the digester and cookstove;
- The amount and type of feedstock used as input into the digester (depending on the capacity);
- The typical number of people in the household for different capacities of digester/cookstove systems;
- The procedures (e.g., checklists) used to monitor/verify the operation of the appliances during the crediting period that are sufficient to allow the use of the proposed default values.

Alternatively, the SSC WG would like the project participant to consider the following for monitoring:

Option A:

Measure the flow of biogas and methane content in the biogas on a sample basis (90/10 precision) or

Option B:

Carry out the following steps:

(i) Record the manufacturers rated thermal capacity of the biogas stove in $kW_{thermal}$ or the optimum biogas supply required for the biogas stove (cubic feet or cubic metre per hour) in accordance

with the manufactures specifications;

(ii) Monitor the operating hours of the stoves in the selected households by detecting the temperature of the flames as an indication that the stove is switched on or off;

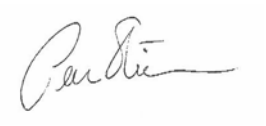
(iii) Compute the total thermal energy production/biogas production based on the operational data and rated capacity following steps (i) and (ii); (Consider proposing a discount factor as the stoves may not be operated at the rated capacity all the time);

(iv) Monitor the methane content on sample basis (90/10 precision) or propose a default value when the latter option of (i) i.e., hourly biogas supply rate is chosen.

Signature of SSC WG Chair ……..

(Hugh Sealy)

Date: 24/09/2009



Signature of SSC WG Vice-Chair ……..

(Peer Stiansen)

Date: 24/09/2009

Information to be completed by the secretariat	
SSC-Submission number	SSC_346
Date when the form was received at UNFCCC secretariat	24 September 2009
Date of transmission to the EB	24 September 2009
Date of posting in the UNFCCC CDM web site	24 September 2009