



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):	Clarification on the applicability of AMS-I.C regarding a back-up unit for consideration of installed capacity limit
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 14
Name of the authors of the query:	Ryoto Uchida Institution: Mitsubishi UFJ Securities Co., Ltd. uchida-ryoto@sc.mufg.jp

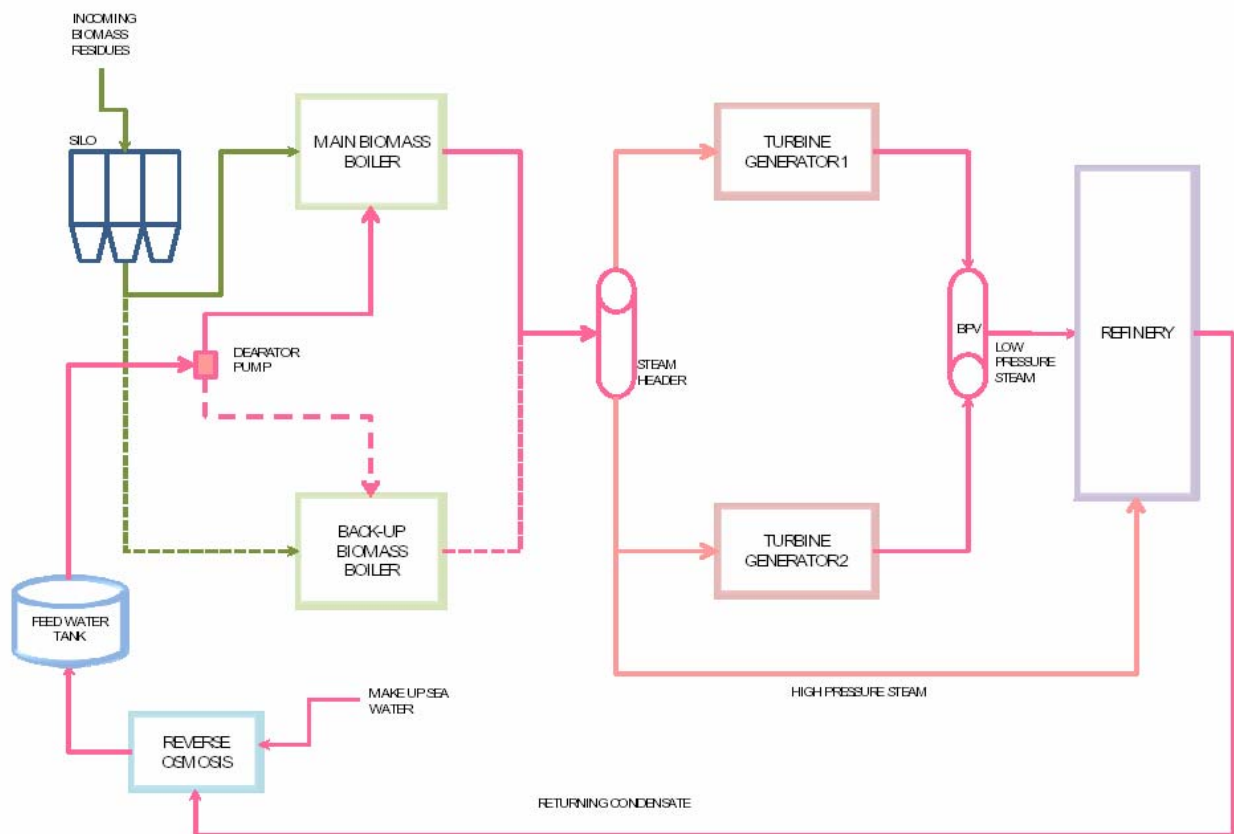
Summary of the query:

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 project involves the construction of a centralized cogeneration system that generates heat and electricity for on-site use. The project reduces GHG emissions by displacing fossil fuel use with use of biomass residues and considers AMS-I.C. to be applied. A boiler installed has a maximum output of 30MWth and drives a steam turbine with generation capacity of 3MWe, which is within the limits of small scale methodology.

To increase the reliability and maintain constant energy output for the end product at the refinery, one stand-by system (consisting of a boiler, turbine, and generator with the same capacity as the main system) is made available, which allows full maintenance to be conducted on the main boiler and turbine generator while they are off operation. All steam generated by the biomass boilers goes through one steam header and is fed to either of the steam turbine generators and the refinery. The system diagram is as shown below:



This is a request to clarify the following two points;

- (a) The five criteria for a back-up unit, to be proposed hereunder, are appropriately established, so that the back-up unit that meets all the criteria can be excluded from consideration in the determination of installed capacity limits when AMS-I.C is applied.
- (b) The back-up biomass boiler in the project described above meets all the proposed criteria and therefore can be excluded from consideration in the determination of installed capacity to satisfy the energy output limit stipulated in AMS-I.C.

The five criteria, mentioned in the point (a) and to be proposed hereunder, are developed in accordance with the criteria suggested in the third paragraph of “Answer to authors of query by the SSC WG” of the SSC_270 clarification, so that all the issues related to this exclusion are addressed.

The qualification of the back-up biomass boiler, mentioned in the point (b), is described in the italic format in each section of the proposed criteria, explaining how it meets the criteria.

1. Definition of a back-up unit

A back-up unit in contrast to the main unit in a project activity is defined as a unit that satisfies all these conditions.

- a. It is operated in substitution for the main unit with no simultaneous operation.
- b. It has no larger output capacity than the main unit.
- c. No CER are claimed for the emission reductions attributed to its operation

These conditions ensure that operation of any back-up units can realise no larger output than the capacity of the main unit in the project activity. Thus the back-up unit may be excluded from consideration in the determination of installed capacity.

The eligibility of the proposed back-up unit for condition a and c shall be judged by the criteria 2, 3 and 5 to be followed, while the eligibility of the proposed back-up unit for condition b shall be checked by simple comparison of the output capacity between the main and the back-up units.

In the project activity, the back-up biomass boiler has the same capacity of 30MWth as the main biomass boiler, confirming that condition b is met.

2. Capacity limits to 'common systems' used by the main and back-up units

The capacity for the common system to supply input to or receive output from both of the main and back-up units must be limited to the level at which no back-up unit can be operated simultaneously with the main unit. Thus this criterion shall ensure the condition 1.a. described above.

From a safety point of view, only one boiler can be operated at a time in the project activity. It is not possible to have more than one boilers operated because of the following technical limitations;

- a. The installed steam header (diameter 300mm) to receive all steam from the boilers is designed to allow only one boiler in operation. Operation of two boilers will put the plant in a dangerous condition where the pressure drop between boiler outlet and steam header off-take increases to 0.2 bar (should be kept less than 0.1 bar) and the steam velocity reaches its upper limit of 15 m/s. The steam header with diameter of 400mm is required for two boilers operation in order to avoid the pressure drop and keep the velocity as low as 8 m/s.*
- b. The capacity of dearator pump to supply water to the boilers is only 50 tons of water per hour whereas the capacity of 80 tons/hour is needed to operate two boilers.*
- c. The R/O (Reverse Osmosis) used in the common system to supply water to the boilers has too small capacity (50 m3/hour) to allow more-than-one boilers in operation continuously.*

3. Consequence if an excluded unit is not operated as back-up

If an excluded unit is operated in the same manner as the main unit, the CDM benefits given to the project must be reduced. This property is ensured by the condition c of the definition. Consequently, the more use of the back-up unit shall be penalized by the more reductions in CER.

In the project, since the two units are identical in the capability aspect, the excluded unit can be operated in the same manner as the main unit with regard to the performance. However, such operation is penalized and results in the adverse consequence that CER will not be claimed for the back-up operation, because of the condition 1.c.

4. Mechanism to avoid dividing a large scale project into several small scale projects

Criterion 1 ensures that operation of any excluded units can never expand the scale of the project activity. In addition, output of any excluded units must not be used in any other project activities, so that this exclusion never leads to dividing a large scale project under any circumstances.

All the steam output from the back-up boiler is fed into the steam header of the project activity. Therefore there are no circumstances where steam output from the back-up boiler is used in any other project activities.

5. Metering of project output

Both of the main unit output and the excluded unit output must be monitored with separate meters before they are put into the common system. This criterion allows to verify no simultaneous operation of any back-up units with the main unit and to clearly distinguish the emission reductions attributed to the main unit from the ones attributed to the excluded units. In addition, no CER are claimed for the emission reductions attributed to the excluded units. Thus the conditions 1.a. and 1.c. shall be checked ex-post.

Both of the main and the back-up units have separate flow meters to measure the steam flow rate, steam temperature, and steam pressure. The data of both units have been separately monitored and recorded to ensure that they never worked simultaneously. It also enables to clearly distinguish the emission reductions attributed to the main unit from the ones attributed to the excluded units. Accordingly, only the

readings from the main boiler counts from CERs.

Would you clarify that the proposed set of the criteria for a back-up unit is appropriately established so as to be excluded from the determination of installed capacity and that the back-up biomass boiler in the described project meets the proposed criteria?

Recommendation by the SSC WG:

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

Please refer to paragraph 40 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 noted that all high pressure steam generated by the biomass boilers (main and back up) goes through a common steam header and is fed:

- (a) to one of the steam turbine generators i.e., turbine generator 1 or turbine generator 2; and the rest to
- (b) to the refinery

The SSC WG clarifies that stand-by (or backup) unit(s)/system(s) shall be excluded from consideration in the determination of installed capacity limits and debundling check if and only if, the following conditions are all met:

- (a) The back-up unit(s)/system(s) are included in the boundary and operated in substitution for the main unit(s) only, with no simultaneous operation;
- (b) The back-up unit(s)/system(s) in total have an output capacity less than or equal to the main unit(s);
- (c) No emission reductions are attributed to any operation of the back up unit(s)/systems(s) during the crediting period;
- (d) The energy generated by the main and back-up unit(s)/system(s) flows through 'common systems' (e.g., steam header, electrical bus bar etc.); the 'common systems' shall have a capacity limit such that it allows only transmission of the input/output at any given time from either the main or back-up unit(s)/system(s), i.e., only input/output either from the main or from the back up unit/system (but not from both) can be transmitted at any given time;
- (e) The energy output from the main unit and the backup unit(s)/system(s) shall be continuously metered separately with calibrated equipment.



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

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