



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>	19–22 October 2010, SSC WG 28
<i>Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):</i>	Clarification on the determination of baseline fuel mix ratio for a new cogeneration plant
<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>	Niroj Kumar Mohanty Institution: Core CarbonX Solutions Pvt Ltd nmohanty@corecarbonx.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.

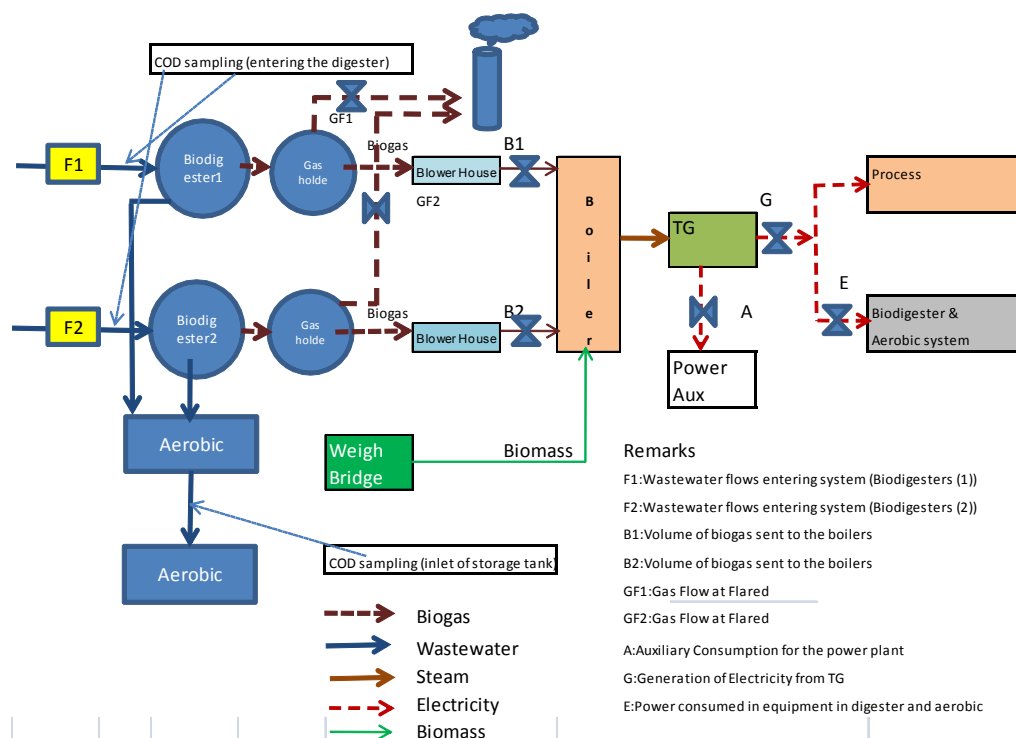
Original text from Stakeholder:

The project activity is a new captive cogeneration project activity which uses biogas and bagasse for steam and electricity generation. The project is generating simultaneously thermal energy and electrical energy in one process as per the requirement of paragraph 2 of AMS I C version 17. Thus; it is eligible as a Cogeneration project.

The project proponent has established a new distillery facility. It has installed a Biomethanation unit (biodigester) based on Mixed Tank Reactor Technology to treat the liquid effluent and capture the biogas generated from the treatment of the liquid effluent from the new distillery facility. The project proponent would use the biogas captured from the biomethanation plant in the 30 TPH boiler of Thermax for steam generation. The boiler generates steam at pressure of 65 Kg/cm² pressure and temperature of 480 +/- 5 DegC. The same steam is/will be used in the 3 MW back pressure turbine of Petagon Turbines (P) Ltd for electricity generation. The electricity generated from the turbine is supplied for captive power requirement of the distillery unit. The project proponent also extracts the steam from the turbine at the pressure of 3.54 Kg/cm². The extraction steam is being /will be used to meet the process steam requirements of the distillery facility.

The biogas that is generated at the facility can only meet 30% of the total fuel input requirements for steam and electricity generation. The emission reduction associated with biogas used is not being claimed under the CDM project and it has not been taken up as a separate CDM project. The Project activity has been developed intending to use bagasse for the rest 70% fuel inputs into the boiler. This is/will be procured from the nearby sugar mills and is being /will be used as a supplementary fuel in the boiler along with the biogas for steam and electricity generation. In the absence of the project activity 70% of the fuel inputs into the boiler that is currently being fulfilled from bagasse would have been met by coal. Thus, the project activity displaces utilisation of coal for the 70% share of the total fuel input.

Project activity diagram (Greenfield project)

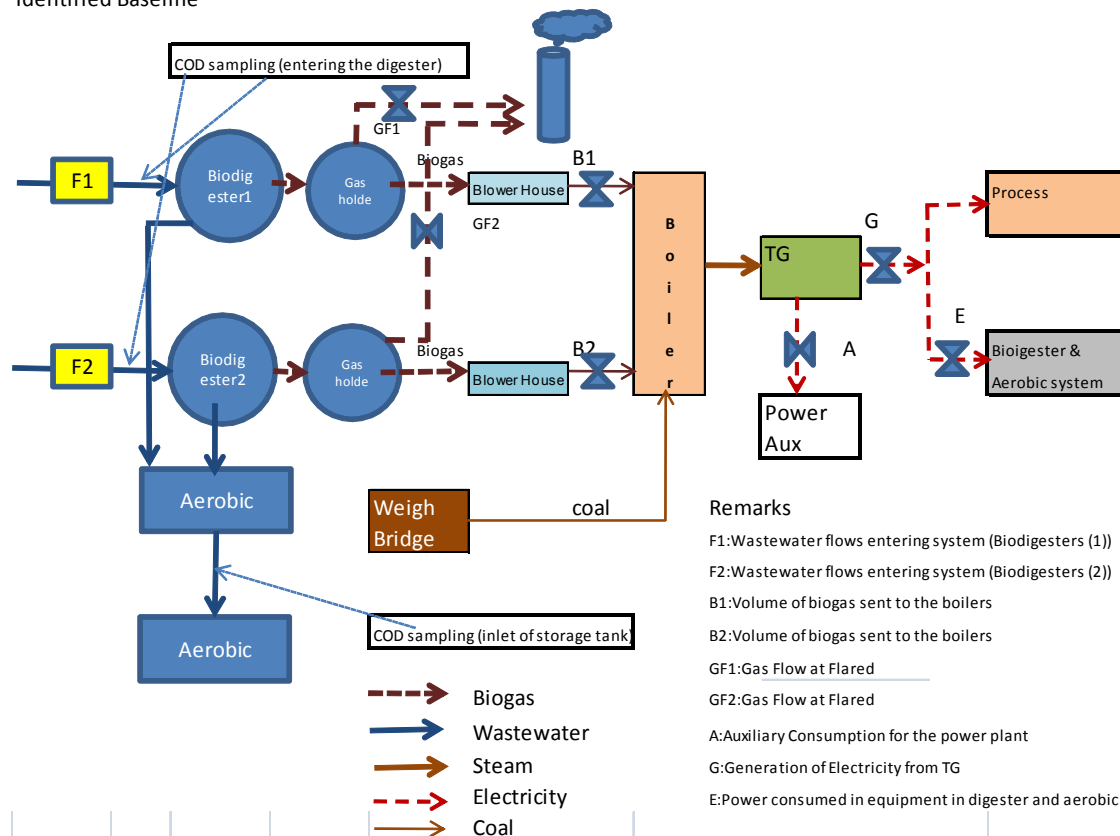


The distillery facility and project activity is a Greenfield project activity. Thus, there is no historical information available. This requires establishment of the most plausible energy supply sources in accordance with the guidance on Greenfield projects in the general guidance to SSC methodologies. Thus, the most plausible baseline scenario that has been identified is

- Coal would be cofired with biogas for steam and electricity generation. Coal would meet 70% of the total fuel inputs.

The above baseline option would have been constructed by the Project proponent in the absence of the CDM project. Coal would have been used with the biogas as a supplementary fuel for steam and electricity generation. The effluent will be treated in the biomethanation plant which will extract and capture the biogas.

Identified Baseline



The above chosen plausible baseline scenario matches with paragraph 15 scenario “(h) Electricity and/or thermal energy produced in a co-fired system” of the AMS I C , version 17. Scenario (h) requires baseline emission determination as per the paragraph 26 of AMS I C :For 15 (h), which states that “baseline emissions shall be determined based on three years average historical data on the relative share of fossil fuel and biomass in the baseline fuel mix. The relative share is determined based on the energy content of each fuel.”

However, the project activity mentioned is a new captive cogeneration project and three year historical data is not available for the baseline fuel mix determination. Thus, baseline fuel mix and cofire emission factor can't be calculated as required by paragraph 26 of AMS I C.

It is being assumed that the biogas generated from the biodigester would be used in the baseline as well project scenario. Thus, fuel inputs from biogas are not being used in the emission reductions. Biomethanation plant (biodigester) is not part of any other CDM project. Thus, the baseline fuel mix would constitute of biogas that is being generated in the project activity plus coal. The project activity is basically replacing utilisation of coal in the cogeneration plant for steam and electricity generation that would have been used in the absence of the project activity. Emission reduction is claimed for the displacement of coal by the bagasse.

Thus, clarification is sought whether baseline fuel mix can be determined without considering the approach mentioned in the paragraph 26 of AMS I C version 17 because the approach mentioned in the paragraph 26 is not suitable for a Greenfield project?

Recommendation by the SSC WG:

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

Please refer to paragraph 14 of the meeting report of the SSC WG 28
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 that the baseline fuel mix for this new cogeneration project can be determined based on the maximum biogas production capacity of the distillery's bio-methanation plant, according to manufacturer's specifications, and the total energy demand of the project plant. The reference to the total energy demand here assumes that the PP has access to data on the total energy demand that will be met by the proposed cogeneration project. From the information made available in this submission, total energy demand will include: annual heat demand that will be supplied to the distillery process, the biodigester and the anaerobic process, as well as the electrical energy demand to power the auxiliary equipment at the refinery. From these data the energy share that can be met by the biogas will be determined, and the remainder will be the share that will be met by the other baseline fuel (eg. coal).

The SSC WG also agreed that the baseline fuel(s) shall be determined using "The Guidance on Greenfield Projects" which can be found in the "General Guidelines to SSC CDM methodologies". Although the author assumes that this baseline fuel will be coal, this will have to be demonstrated, following the steps provided in the guidance.

The SSC WG would also like to point out that since it is possible that the quantity of biogas that will be utilized in the pre-project situation may be different from the quantity that will be used in the project scenario then the bio-methanation plant should be included in the project boundary and any emissions related to the generation and utilization of biogas will have to be taken into account, using the approach in a methodology such as AMS-III.H "Methane recovery in wastewater treatment".

Please note that this response is in the context where the project proponent is not claiming emissions reductions associated with the capture and use of biogas.

Signed by the Chair, Mr. Peer Stiansen

Date: 22/10/2010

Signed by the Vice-Chair, Mr. Hugh Sealy

Date: 22/10/2010

Information to be completed by the secretariat

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