



## 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:	As per procedures for fast track clarifications
Title/Subject (give a small title or specify the subject of your submission, maximum 200 characters):	Clarification regarding two measures taken in the plant simultaneously - Fuel switch and energy efficiency
Indicative methodology to which your submission relates (refer the items of Appendix B of the Simplified Modalities and Procedures), if applicable.	AMS-III.B: Switching fossil fuels AMS II.D: Energy Efficiency and fuel switching measures for industrial facilities
Name of the authors of the query:	Siddharth Yadav Institution: SGS United Kingdom Ltd <a href="mailto:Sanjeev.kumar@sgs.com">Sanjeev.kumar@sgs.com</a> <a href="mailto:Siddharth.yadav@sgs.com">Siddharth.yadav@sgs.com</a>

### 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.

The project activity as described in the PDD involves the installation of a new gas based captive electricity generation unit and a vapor absorption chiller (see figure 1 and 2 below). The electricity and the waste heat produced by the gas turbine electricity generating unit will displace:

- Part A: on-site captive diesel fired electricity generation unit and grid electricity import, and
- Part B: a portion of electricity used in the vapor compression chiller.

Figure 1: Baseline

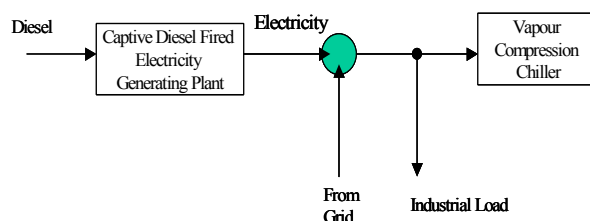
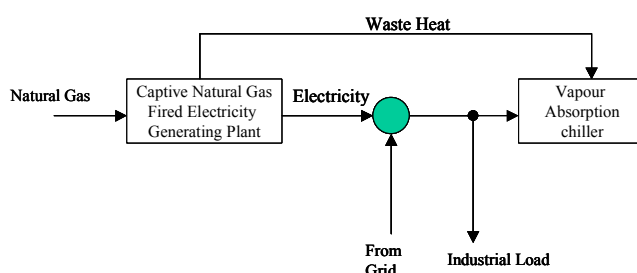


Figure 2: Project Case



The DOE seeks clarification whether the combination of AMS III.B (for fuel switch activity) and AMS II.D (for energy efficiency activity) can be applied for the proposed project activity.

**Recommendation by the SSC WG:**

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

This recommendation is as per the procedures for fast track clarifications as specified in paragraph 8 of the ‘procedures for the submission and consideration of request for clarification of approved small-scale methodologies’ found at [http://cdm.unfccc.int/Reference/Procedures/MethSSC\\_proc01\\_EB34a06.pdf](http://cdm.unfccc.int/Reference/Procedures/MethSSC_proc01_EB34a06.pdf).

**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 to clarify that the application of AMS III.B and AMS II.D to the proposed project activity is not appropriate. The reasons are elaborated below.

It shall be noted that the clarification already provided by the SSC WG in response to submission SSC\_147 is relevant to this request for clarification as well.

Approved methodology AMS III.B is applicable to project activities that accomplish emission reductions by substituting fossil fuels in facilities which are already in operation, for example:

- A solid fuel like coal is substituted with a gaseous fuel like natural gas in a district heating unit; or
- Fuel oil is replaced with natural gas in a drying unit of an industrial facility.

This is reflected in the applicability condition of the methodology which states “this category comprises fossil fuel switching in existing industrial, residential, commercial institutional or electricity generation applications” and further elaborated in the monitoring section where monitoring of the fuel use and output of the facility before the fuel switch and after the fuel switch has been stipulated. Further it shall be noted, “the project boundary is the physical, geographical site where the fuel combustion affected by the fuel-switching measure occurs.”

As regards Part A of the submission, it is understood from the description that the project activity is the installation of a new gas based energy generation system that will substitute diesel generation (component A) as well as import of grid electricity (component B). The SSC WG agreed to clarify that approved methodology AMS III.B is not applicable to the component B of the proposed project activity, i.e. displacement of grid electricity. Consideration of baseline emissions from the grid electricity use and combined margin approach to calculate grid emission factor are not covered under AMS III.B. However, component A of the proposed project activity, i.e. natural gas based energy generation substituting diesel electricity generation, is an eligible activity under the AMS III.B if all the other conditions of the methodology are met. *(In this context the SSC WG noted that the PDD mentions the capacity of the gas based power plant as 1.4 MW but does not mention the capacity of the diesel generator set in the baseline. The PDD also states electricity needs in the baseline are met by diesel generation and in the case of ‘emergency’ grid electricity is used. Elsewhere in the PDD it is stated western grid is not reliable therefore PP resorted to diesel generation in the baseline which is not coherent with the explanation of use of grid electricity as an emergency source).*

Further Paragraph 9 (a) of AMS III.B provides the following guidance on how to calculate baseline emissions:

“(a) Monitoring of the fuel use and output for an appropriate period (e.g., a few years, but records of fuel use may be used) prior to the fuel switch being implemented - e.g. coal use and heat output by a district heating plant, liquid fuel oil use and electricity generated by a generating unit (records of fuel used and output can be used *in lieu* of actual monitoring).”

The PDD refers to the combined margin methods of AMS I.D to calculate the baseline emissions, which is not in compliance with the above guidance of the methodology.

As regards Part B of the submission, the project activity proposes to apply AMS II.D for the component involving shift from compression refrigeration system to absorption refrigeration system to meet the cooling load demands. This is not appropriate for several reasons:

- AMS II.D covers project activities aimed primarily at energy efficiency for example replacing an existing electrical motor with a more efficient electrical motor. Shift to vapor absorption system chiller from vapor compression system chiller in itself will not constitute an energy efficiency activity, when viewed in isolation, in fact the COP of vapor compression system is usually higher, a value of 5 is technically feasible. However under specific situations, for example when using a electricity focused combined heat and power plant (CHP)<sup>1</sup> using the waste heat in the engine exhaust gas in the absorption system might lead to favorable conditions in terms of technical efficiency.
- Shift to vapor absorption system (using either Li-Br water or Ammonia-water refrigerant/absorbent combination) from the vapor compression chiller which usually uses a CFC or HCFC refrigerant would result in a need to account for the direct emissions of the baseline refrigerant (possible routes include destruction, recovery/recycling or release to atmosphere). These issues are not covered in AMS II.D.

Further the PDD shows increased electricity generation in the project activity compared to the baseline level and similarly an increased installed cooling capacity as compared to the baseline capacity. In this regard the author of the submission may wish to note the guidance from the Board, i.e. Paragraph 10 of annex 1 of EB 08 that states “If a proposed CDM project activity seeks to retrofit or otherwise modify an existing facility, the baseline may refer to the characteristics (i.e., emissions) of the existing facility only to the extent that the project activity does not increase the output or lifetime of the existing facility. For any increase of output or lifetime of the facility which is due to the project activity, a different baseline shall apply”.

In conclusion, there are a number of factors — as discussed above — that makes the approved methodologies AMS III.B and AMS II.D inapplicable to the described project activity.

The Board at its 38<sup>th</sup> meeting approved a new type II methodology “AMS II.H Energy efficiency measures through centralization of utility provisions of an industrial facility” for project activities that implement more efficient technologies to produce thermal energy, electrical energy and cooling in addition to switching fossil fuel in an integrated manner (see annex 1 of the fourteenth meeting report of the SSC WG). Project proponent may explore applying AMS II.H to the proposed project activity.

<sup>1</sup> i.e. The CHP plant is primarily for electricity supply and heat is the by-product.



Signature of SSC WG Chair .....

(Ulrika Raab)

Date: 28/03/2008



Signature of SSC WG Vice-Chair .....

(Kamel Djemouai)

Date: 28/03/2008

**Information to be completed by the secretariat**

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