



**Approved baseline and monitoring methodology /  
methodological tool clarification response form  
(Version 02.0)**

**INFORMATION TO BE COMPLETED BY THE SECRETARIAT OR PANEL / WG**

<b>Date and number of Panel / WG meeting:</b>	25–28 August 2014, SSC WG 45
<b>Title/Subject of the request for clarification:</b>	Consideration of attributable GHG emissions from additional fossil fuel boiler installed in conjunction with the WHR project activity
<b>Reference number of the request for clarification:</b>	SSC_710
<b>Exact reference (number, title and version) of the methodology or methodological tool to which the request for clarification applies:</b>	“AMS-III.Q: Waste energy recovery (gas/heat/pressure) projects” - Version 5.0
<b>Fast track or Regular track:</b>	<input type="checkbox"/> Fast track <input checked="" type="checkbox"/> Regular track

**Summary of the request for clarification**

Original text from the DOE:

Clarification is sought w.r.t. the following project scenario and issues:

**Background:**

Prior to the project implementation a cement/production facility covers its electricity demand by elec. energy from the connected grid. The connected load/electricity demand in this case is 12MW.

The PP decides to make use of the waste heat from its own facilities. The potential electrical power generation from the waste heat recovery (WHR) source is 8 MW. As this is not sufficient to cover the demand by the cement/production facility the PP considers to install additionally a fossil fuel fired boiler (FF-boiler). Both the WHR steam and the fossil fuel boiler steam feed a common header which caters a 12MW turbine sufficient to cover the facilities electricity demand.

The decision on the power plant including the WHR part and FF- boiler has been taken at the same time.

**Additionality:**

Specific clarification is requested whether the additionality is only to be demonstrated for the WHR part of the plant or whether the entire plant should be base for the additionality demonstration, in this case financial analysis - IRR calculation. Currently all registered projects under the methodology AMS-III.Q. only have considered the WHR part. However it is unclear whether the project would be financially viable considering the entire plant including the FF- boiler.

Clarification is sought whether the financial analysis shall cover the entire plant or if both scenarios shall be analysis and both shall demonstrate its additionality.

If only the WHR part shall be considered for the financial analysis, how should the investment, O&M costs, etc be considered for equipment which used in common by both boilers.

**Project Boundary:**

Further clarification is sought whether the project boundary shall include the FF-boiler under above stated conditions.

**GHG emissions:**

Also the related methodology AMS-III.Q does not consider project emissions from fossil fuel consumption in an attached fossil fuel fired boiler. AMS-III.Q. in §11 under parameter fWCM states that those project emissions only have to be considered in case where it is technically not possible to apportion the energy output to WHR and fossil fuel used. However as per simplified modalities and procedures §31 “the project

boundary shall encompass significant anthropogenic emissions by sources of greenhouse gases under the control of the project participants that are reasonably attributable to the small-scale CDM project activity, in accordance with provisions of appendix B for the relevant project category.”

It is considered that the fossil fuel fired boiler is only installed due to the project activity and was not operating prior to the implementation of the project activity. The FF- boiler is clearly under the control of the PP and further additional emissions occur due to the installation of the project activity due to the following.

The baseline is electricity from the grid. For the remaining 4 MW to cover the facility demand a FF-boiler is in place, replacing the grid. The emission factor of the fossil fuel could be higher than the grid emission factor. And as a result due to the project activity it is not ruled out that additional attributable emissions occur. In a glance, the difference between the fossil fuel emission factor and the grid emission factor for the part of electricity generated from the FF- boiler are not considered.

Therefore clarification is sought whether those emissions have to be considered in the case that the baseline is electricity from the grid and an additional fossil fuel fired boiler has been installed next to the WHRB to cover the demand of the production facility.

Even though these emissions do not have to be taken into consideration as project emissions in accordance with §30 of the simplified modalities and procedures, clarification is sought whether the same has to be considered as leakage emissions referencing, “leakage is defined as the net change of anthropogenic emissions by sources of greenhouse gases which occurs outside the project boundary, and which is measurable and attributable to the CDM project activity.”

Please see also clarification SSC\_173 on this topic.

**Additional information requested (on 25/07/2014 and on 30/07/2014) and response received (28/07/2014 and on 04/08/2014):**

1. In order to have clear understanding of the situation regarding the baseline and project scenario, the DOE is requested to share the recent version of the PDD of the project referred in the clarification.

Response: Actually we assess currently two cases which fall under this clarification. Please find attached the latest available versions of the project design document of both cases. Please note that the projects are still under validation and the responses below are for both cases.

2. The DOE is requested to clarify whether grid connection will remain intact in the project scenario or it will be disconnected.

Response: Yes, the grid connection will remain esp. as back-up e.g. during maintenance of boilers or in case of any emergency.

3. The DOE is requested to confirm whether, all waste heat was fully exhausted or flared in the baseline.

Response: The waste heat was fully released to atmosphere in the baseline scenario.

4. What is emission factor of grid used in baseline scenario and fossil fuel used to generate electricity in fossil fuel based boiler in project scenario.

Response: 1. Coal: NCV: 3800 kCal/kg; Share of use: 30%

2. Coal Fines/ Rejects/ Coal Middling: NCV: 2800 kCal/kg; Share of use: 66.30%

3. Char /dolochar: NCV: 2200 kCal/kg; Share of use: 3.70%

(!Note: the values on NCV and Share of use are not from the related project activities but from another project activity due to lack of information from the related activities and also as no related project emissions had to be considered so far PP did not provide the data yet.)

Country specific emission factors for coal fines and dolochar are not available. As per CEA database, for the calculation of the related grid emission factor, an EF<sub>coal</sub> of 90.6 gCO<sub>2</sub>/MJ has been applied (see attached file database ver5.0 for publishing.xls under assumptions sheet).

5. Was the fossil fuel fired captive power plant already used in pre-project scenario

Response: No, both the boilers are implemented simultaneously.

6. What is the impact on IRR if not only the WHR part is considered for financial analysis but the WHR+Fossil fuel boiler which cater one common header and one turbine?

Response: There is no negative impact on Additionality in both the situation. Not yet assessed. But

there will no adverse impact on additionality, as cost of WHRB electricity (A) is found higher than coal based electricity (B); and if we consider combination of Coal with WHRB i.e. (C) = (xA+yB), where X capacity in MW for WHRB + y capacity in MW from AFBC then it will be always lower than (A). This means WHRB based power cost will be higher and the project is always additional.

7. Confirmation is required that no supplemental fuel is used in the WHRB.

Response: There is no supplemental fuel used in WHRB boiler. This is demonstrated during site visit, and this is also technically not possible.

#### Clarification by the secretariat or Panel / WG

The Small-Scale Working Group (SSC WG) of the Executive Board (hereinafter referred to as the Board) of the clean development mechanism (CDM) would like to thank the author for the submission.

#### Clarification on additionality demonstration

It is understood from the clarification request that fossil fuel boiler would be installed in project scenario, as the output from WHR is not sufficient to cater entire electricity demand of the facility, i.e. the fossil fuel boiler would not be implemented without implementation of WHR boiler. Considering this scenario, the SSC-WG is of the view that fossil fuel boiler is an integral part of the investment decision to implement the WHR project.

Therefore, the SSC WG would like to clarify that, for the purpose of demonstrating additionality the cost and revenues associated with the operation of the fossil fuel boiler need to be considered along with the cost and revenues of the WHR boiler.

#### Clarification on project boundary

The SSC WG would like to clarify that the project boundary shall include the fossil fuel boiler which was installed in the project scenario.

#### Clarification on estimation of GHG emissions

AMS-III.Q version 5.0 uses parameter 'fwcm' which is a fraction of total electricity generated by the project activity using waste energy, use of this parameter ensures that only electricity generated that is attributable to the waste energy source is considered for emission reduction calculations. Thus, the SSC WG would like to clarify that, the emissions due to operation of the fossil fuel boiler to meet the balance of the electricity demand that is not met by the operation of WHR need not be taken into account as project emissions. However, as explained in paragraph 11 for the parameter 'fwcm' and complemented by paragraph 20 of AMS-III.Q version 5.0 project emissions are considered "in cases where auxiliary fossil fuel is used to supplement the waste energy directly in the waste heat recovery combustion system and the energy output cannot be demonstrably apportioned due to technical constraint (e.g. waste gas measurement and its quality) between fossil fuels and the waste energy, a value of 1 for 'fwcm' can be used and consider the emissions resulting from the combustion of fossil fuel as project emissions".

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## Document information

<i>Version</i>	<i>Date</i>	<i>Description</i>
02.0	18 July 2013	Revised to remove the row “Date and signature of the chair and vice chair of Panel/WG (in case of clarification by Panel/WG)”
01.0	4 July 2013	Initial publication. This document supersedes and replaces the following documents: <ul style="list-style-type: none"><li>• Recommendation Form for Small Scale Methodologies (F-CDM-SSCwg) (Version 01.1)</li><li>• Recommendation Form for Small Scale A/R Methodologies and Procedures (F-CDM-SSC-AR) (Version 01.1)</li></ul>
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