CDM: Response form for Request for revision of approved methodologies (version 01.1)

Date of Meth Panel meeting:	22 - 26 June 2009
Title and number of Request for revision	Revision of ACM0011: "Revision to the existing methodology to include project activities with less than three years of operational history". AM_REV_0152

Summary of the query:

Please use the space below to summarize the request for revision on the related approved methodologies.

The consolidated methodology ACM0011, "Consolidated baseline methodology for fuel switching from coal and/or petroleum fuels to natural gas in existing power plants for electricity generation", is applicable to project activities that switch from coal and/or petroleum fuels to natural gas in an existing power plant for electricity generation, with an operation history of at least three years using the baseline coal and/or petroleum fuel.

This request for revision seeks to expand the applicability of ACM0011 to project activities that have been undertaken within three years from the initiation of operations by the project activity power plant (PAPP) and, as a consequence, three years of historical operational data is not available.

In this request, modifications to the baseline and leakage emissions calculation sections have been proposed. For cases when at least three years of historical data is available, the calculation of baseline emission is the same as in the present version of ACM0011. In the case when less than three years of historical data is available, project proponents presented an additional procedure to calculate the baseline emissions with two options.

Option 1:

Based on the operational history of at least ten plants delivering a similar service in the identified geographical area, a regional average capacity factor (PLF_{AVG}) for this type of power plants has to be calculated. The power plants should be of similar scale and operate on similar technology. Subsequently, the baseline average power generation (EG_{AVR}) of the PAPP is calculated as:

$$EG_{Avr} = PLF_{Avg} \times CAP_{PAPP} \times 8760$$

Where CAP_{PAPP} is the nominal capacity of the project activity power plant in MW, before the implementation of the project activity. Baseline emissions are calculated as:

$$BE_y = EG_{AVR} \times EF_{BL,plant,y} + (EG_{PJ,y} - EG_{AVR}) \times \min(EF_{BL,plant,y}, EF_{grid,y})$$

Where EG_{PJ} is the quantity of electricity supplied by the project activity power plant to the electricity grid in year y. $EF_{BL,plant,y}$ is the baseline emission factor of the project activity power plant in year y, i.e. the CO_2 emissions per electricity generation, if coal and/or petroleum fuels would be used in the baseline as fuel in the project activity power plant, and $EF_{BL,plant,y}$ is the emission factor of the grid.

Option 2:

For power plants connected to a grid with less than ten similar operating power plants, the following formula is proposed to be used for the calculation of the baseline emissions:

$BE_y = EG_{PJ,y} \times min(EF_{BL,plant,y}, EF_{grid,y})$

For the calculation of leakage emissions, when less than three years of historical data is available, the leakage emissions should be calculated using the lower between these two emission factors, $EF_{CH4,upstream,grid}$ and $EF_{CH4,upstream,BL}$. The following formula would be used for leakage emission calculations:

$$LE_{CH4,BL,y} = \min(EG_{PJ,y} \times \frac{3.6}{1000} \times \frac{EF_{CH4,upstream,BL}}{\eta_{PAPP}} xGWP_{CH4}, EG_{PJ,y} xEF_{CH4,upstream,grd} xGWP_{CH4})$$

Recommendation by the Meth Panel:

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

Not applicable.

(b) Please use the space below for providing guidance, as per Para 93 of EB25 Report, on what type of projects need to revise the PDD as a consequence of the suggested revision, if the recommendation is to revise the methodology.

Not applicable.

Answer to authors of the request for revision by the Meth Panel :

Please use the space below to provide an answer to the authors of the above query

The recommendation is not to approve this request for revision.

The Meth Panel clarifies that the requirement that the plant has a three years operation history with coal or a petroleum fuel is not only related to the calculation of a number of parameters in the baseline emissions section, but it has also been introduced for other reasons.

Firstly, this provision aims to provide additional confidence that the baseline scenario is actually the continued use of using the historical fuel. With a three years historical operation history, there is a historical record that the operation of the plant was feasible with the fuels used in the past. This historical record makes it more likely that the continuation of the current fuel use is a plausible baseline scenario.

Secondly, this provision aims to avoid gaming. With the proposed revision of the methodology, operators of a new natural gas or dual fuel power plant could intentionally operate the plant for few days, weeks or months with a petroleum fuel, then switch to natural gas and claim credits for a fuel switch.

The proposed methodology does not address these issues.

Furthermore, in the PDD submitted by the project proponents, it is stated that the PAPP has been historically using naphtha as fuel, and it will switch to natural gas under the project activity. It is also stated in the PDD, that the PAPP was commissioned in October 2000 and the fuel switch project was completed in September 2001. As a consequence, the PAPP has operated using naphtha for only 11 months. In this case, it would be questionable to state that the PAPP was designed to use a different fuel than natural gas and in such short period of time it would switch from one fuel to other. It could be the case that a new natural gas power plant is built, and it uses naphtha for a limited period of time while: (i) the natural gas infrastructure is under construction, or (ii) a certain amount of naphtha that was already purchased is consumed.

In this context, it is important to note that the procedures for baseline selection, additional demonstration and the calculation of baseline emissions are for new natural gas power plants, quite different than for projects undertaking a fuel switch in existing plants. For example, an investment analysis is mandatory in AM0029 and the baseline emission factor is calculated in a more conservative manner.
Moreover, the approach proposed by the project proponents, of using a regional average capacity factor as representative of the PAPP capacity factor, is considered as not fully appropriated. The capacity factor depends considerably on the technical availability of the plant, its efficiency and the fuel price (which may determine the merit order of the plant). These factors can vary between power plants and it is not fully clear whether this approach is reasonably conservative. The proposed approach is also a bit vague with regard to what plants should be regarded as similar. This opens the door for gaming. A clear and unambiguous definition would be required, which also ensures that other plants have actually similar operating conditions.

Signature of Meth Panel Chair ……..
Date: 26/06/2009 *(Philip Gwage)*

Signature of Meth Panel Vice-Chair ……..
Date: 26/06/2009 *(Pedro Martins Barata)*

Information to be completed by the secretariat	
F-CDM-AM	AM_REV_0152
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