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

Date of Meth Panel meeting:	04 - 08 May 2009
Title and number of Request for revision	Expansion of applicability conditions of ACM0002 to include refurbishment/replacement of operational units and corresponding calculation of baseline emissions AM_REV_0143

Summary of the query:

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

The consolidated methodology ACM0002, "Consolidated baseline methodology for grid-connected electricity generation from renewable sources", is applicable to grid-connected renewable power generation project activities that involve electricity capacity additions.

The present request for revision intends to expand the applicability of ACM0002, in order to include project activities for the "refurbishment/replacement" of hydropower facilities affected by negative long term alterations.

Project proponents have divided this request for revision in two: AM_REV_0143 and AM_REV_0144. In AM_REV_0143, project proponents include the provisions proposed to deal with "replacement" project activities, whilst in AM_REV_0144 project proponents include the provisions proposed to deal with "refurbishment" project activities.

In this request, AM_REV_0143, the following modifications to ACM0002 are proposed:

(1) To include the following definition in the definitions section: *"Refurbishment/replacements: Investment aimed at increasing and/or reestablishing the power generation capacity at one or several existing unit(s) compared to the level under business as usual. Refurbishments and replacements affect parts of or the entire existing units".*

(2) To adjust the applicability conditions in accordance with the expanded scope, and include the following applicability conditions:

- *In the case of refurbishments/replacements, only improvement measures which require capital investment shall be included. Regular maintenance and housekeeping measures cannot be included in the proposed CDM project activity;*
- *In the case of refurbishments/replacements, the methodology is only applicable if the most plausible baseline scenario is b) the continuation of the current situation, i.e. to use all power generation equipment that was already in use prior to the implementation of the project activity and undertaking business as usual maintenance;*
- *In the case of refurbishments/replacements, only projects at hydro power plants where all units are part of the refurbishment are eligible;*
- *In the case of refurbishments/replacements facilities affected by unusual circumstances or negative long term alteration, only plants which have demonstrated a power generation of zero over the five last years are eligible for this methodology.*

(3) To include a procedure for the identification of the baseline in case project activities for the refurbishment/replacement of all existing grid-connected renewable power plant/unit(s) at the considered site.

(4) To request the investment analysis as compulsory for the demonstration of the additionality in the case of refurbishment/replacement project activities.

(5) To provide a new procedure for the calculation of the baseline emissions, if the project activity is the replacement of hydropower unit(s). This procedure includes the use of a so-called factor "*K*", which represents the share of power generated in the baseline (i) by the power grid and (ii) by the replaced generation unit, between the historical generation levels '$EG_{historical}$ average' and '$EG_{historical}$ maximum'. The proposed calculation is presented next:

- If EGy>EGhistorical,max:

$$BE_y = \left(EG_y - EG_{historical,\max}\right) \cdot EF_{grid,CM,y} + \left(EG_{historical,\max} - EG_{historical}\right) \cdot K \cdot EF_{grid,CM,y}\right)$$

- If EGy<EGhistorical,max:

$$BE_y = \left(EG_y - EG_{historical}\right) \cdot K \cdot EF_{grid,CM,y}\right)$$

- And,

$$K = \frac{\sum_{a=0}^{a=n-1}\left[EG_{historical,\max} - \left(MAX\left(EG_{historical}, EG_a\right)\right)\right]}{n \cdot \left(EG_{historical,\max} - EG_{historical}\right)}$$

Furthermore, project proponents mentioned that these requests for revision are in line with the Meth Panel response to AM_CLA_0130.

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 to approve this request for revision with some required adjustments from the Meth Panel.

As stated in the response to AM_CLA_0130, the Meth Panel acknowledges the importance of including the "refurbishment" of renewable energy plants as CDM project activities. In this regard, the Meth Panel considers that the project proponents have come up with a useful proposal. The Meth Panel has introduced some changes to the original proposal that are, however, in line with the general approach proposed by the project proponents. Please refer to the Annex of the MP38 Report in regard to the revision of ACM0002.

- *Concerning the use of the "K" factor:*

  By introducing this "*K*" factor, it is the intention of the project proponents to be more conservative in the calculation of the emission reductions compared to the use of the average historical electricity generation as baseline. This factor implicitly introduces a reflection of the extent to what annual historical power generation varied from year to year. If the historical power generation is constant, the baseline electricity generation is calculated close to the historical electricity generation. The larger the annual variations, the higher the baseline electricity generation. It may be argued that the factor implicitly takes into account the uncertainty associated with future power generation in the absence of the project activity. In the case of a relatively constant historical power generation, it may be more likely that future power generation, in the absence of the project, would be relatively constant. In the case of large historical variations, the future development of power generation is more uncertain. In that regard, the factor measures something similar to the standard deviation.

  After the assessment of this proposal, the Meth Panel decided that it is a methodologically more sound approach to use the standard deviation of the historical generation data instead of the proposed *"K"* factor. The standard deviation addresses the uncertainty due to the variations in the historical power production in a statistically more sound manner than the "*K*" factor, and provides a similar conservativeness levels to address uncertainty, as in other methodologies that have considerable uncertainty with regard to the level of emission reductions. Given that a limited set of historical annual data is not necessarily a good proxy for long-term hydrological variations (for which usually 30 or more years are used), such an adjustment of baseline electricity generation is necessary. Without such an adjustment, the calculated GHG emission reductions may not be attributable to the project activity, as the average annual increased electricity generation may be smaller than the uncertainty of the level of baseline electricity generation.

Signature of Meth Panel Chair ……..
Date: 08/05/2009 *(Philip Gwage)*

Signature of Meth Panel Vice-Chair ……..
Date: 08/05/2009 *(Pedro Martins Barata)*

Information to be completed by the secretariat	
F-CDM-AM	AM_REV_0143
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