Information note

Proposed revision of ACM0013 to address identified issues

I Introduction

1. This note summarizes the issues identified in the information note prepared by the Methodologies Panel (the panel) at its fifty-third meeting and describes how these issues, many of which are related to a low signal-to-noise ratio in the calculation of the emission reductions resulting from the project activity, are addressed in the proposed draft revision of ACM0013 "Consolidated baseline and monitoring methodology for new grid connected fossil fuel fired power plants using a less GHG intensive technology". Furthermore, the note explains additional revisions that were incorporated in the methodology to improve its objectivity and clarity.

II. Approach/Option 1

2. Under Approach/Option 1 of the latest approved version of ACM0013, the project participants shall identify which power plant would most likely be constructed in the baseline scenario. The baseline plant shall be determined through an investment analysis, by comparing the economic attractiveness of different power plants that could be constructed as an alternative investment to the project activity. The baseline emission factor is then calculated based on the efficiency of the baseline power plant and the CO_2 emission factor of the relevant fuel type.

3. The following issues were identified for Approach/Option 1:

Issue 1: Lack of a consistent approach and lack of justification of assumptions in deriving the baseline efficiency under Approach/Option 1 of the methodology.

Issue 2: Lack of project-specific considerations. The actual efficiency of a power plant will depend not only on the category, quality of fuel used and technology employed but also on design and operating conditions. The following project site specific conditions/properties have an impact in the actual efficiency of a coal power plant, inter alia: (i) coal properties; (ii) cooling technology (water or air) and the ambient conditions; and (iii) application of air pollution control equipment. These factors at the project site should be taken into account when estimating the efficiency of the identified baseline technology and fuel. Most PDDs do not consider these site-specific factors but derive the baseline efficiency based on other plants that may face different site-specific conditions.

Issue 3: Use of data from existing plants. In many cases, data from existing plants is used to determine the baseline efficiency of the new power plant that would be constructed in the baseline. A data vintage of at least five years is observed for projects to be commissioned in 2012 or later. The use of data from existing plants is not appropriate because power plants constructed in the past tend to have a lower efficiency than new power plants. This results in a systematic under-estimation of the baseline efficiency.

4. The issues related to Approach/Option 1 are addressed in the draft revised methodology through the following requirements:

- An applicability condition was modified to require that at least 50% of the installed *capacity* of the *recently built* power plants use the same fossil fuel category as the project activity;

- A standardized approach to determine the baseline technology was introduced in the baseline identification procedure. First, all planned power plants using the same fuel category and of similar load and size are identified. Among these plants, the market share of each power generation technology (as defined in the draft revised methodology revision) is determined. These technologies are sorted by their efficiency. The technology at the 80th percentile is identified as the baseline technology;
- The methodology is applicable only if feasibility studies are conducted for the baseline technology and the project technology. The studies are required to include key design parameters and key operating parameters, to specify the operational efficiency of the technologies, to include estimates of all costs and specification of the fuel type used. The studies shall be based on the specific characteristics of the site where the project plant is established.

  The emission reductions claimed are only real and additional if both the baseline technology and the project technology were seriously considered by the project proponent as two alternatives for investment decisions. Consequently, even in the absence of the CDM, the project proponents would be required to conduct feasibility studies for both technologies to inform their investment decision. Therefore, the panel considers that it is reasonable to require feasibility studies for both the baseline and the project technology.

  In addition, the draft revised methodology allows the use of preliminary feasibility studies, or studies conducted for the FEL-2 stage or other equivalent project planning stage, if the studies contain the information as required by the methodology for the feasibility studies.

- The draft revised methodology provides a minimum baseline efficiency for different coal-fired power generation technologies. The values are based on a survey of the measured efficiencies of Chinese plants in 2009, as reported by the China Electricity Council in 2010. The data used is the only comprehensive set of data which is publicly available for one of the countries where CDM projects are implemented and which is based on measured efficiencies and not derived from secondary data.

  These values are not default values to use optionally instead of Approach/Option 1 or Approach/Option 2. They are minimum values for the plant efficiency to be used in Approach 1, in order to provide an additional safeguard for the determination of the baseline efficiency according to Approach/Option 1. The panel considers that the values should not be too conservative or restrictive to prevent the application of the methodology in the other non-Annex I countries and therefore used the average of the top 50% performing plants to determine the values.

III. Approach/Option 2

5. In Approach/Option 2, the baseline emission factor is determined as an emissions benchmark based on a peer group of recently constructed power plants. The peer group consists of recently constructed power plants using the same fossil fuel category, with a comparable size as the project, and operated in the same load category. Based on the rank of the operational efficiencies of the plants in the peer group, the top 15% performer plants shall be identified. The average emission factor of these plants is then determined as the baseline emission factor under Approach/Option 2.

6. The following issues were identified for Approach/Option 2:

Issues 4: The data and assumptions used to calculate the baseline efficiency, which the methodology requires to be documented in the PDD, are not documented in many cases, and where they are documented, there are data inconsistencies for the same plants.

Issues 5: The plants in the peer group are found to be constructed and commissioned on average seven years before the project plant, while various sources demonstrated an improvement in the efficiency of newly constructed power plants from 1.3% points over 10 years up to 3% points over four years.

7. The proposed revision of ACM0013 requires that all underlying data, the data sources and all calculations applied in Approach/Option 2 shall be transparently documented in the CDM-PDD, in a manner that the reader can re-produce the calculations. A procedure is incorporated to estimate the annual efficiency improvement of newly constructed power plants that would likely have occurred due to technical development in the time between the investment decisions made for the peer plants and the investment decision made for the proposed project activity. If no data is available to implement the procedure, a default improvement rate is provided. In addition, the emission factor from Approach/Option 2 is required to be recalculated with newly available data at the first renewal of the crediting period.

IV. Other issues

8. The following other issues were identified:

Issue 6: There are issues with the requirements for investment analysis. For example, the methodology does not clearly specify which revenues and benefits may need to be included in the annual cash flow.

Issue 7: Many PDDs do not provide information on key assumptions and parameters underlying the calculations. Additional guidance could be provided on what exact data and information should be documented in the PDDs to be validated or verified by the DOE.

9. In the revision of ACM0013, an investment comparison analysis is used to demonstrate additionality. The draft revised methodology clarifies the requirements on accounting for revenues and subsidies/fiscal incentives/tax benefits in the calculation of the levelized cost of electricity production. Most of data used to calculate the levelized costs and the information used to determine the efficiency of the baseline technology shall be substantiated by the required feasibility studies.

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History of the document

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