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

Date of Meth Panel meeting:	15 - 19 January 2007
Title and number of Request for revision	Pelita Agung Agrindustri Cogeneration Biomass Project / AM_REV_0032

Summary of the query:

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

The request proposes the introduction of a new scenario 18 to ACM0006. The project corresponds to the project underlying methodology NM0187. The scenario involves the construction of a greenfield biomass residue fired power cogeneration plant. In the absence of the project, electricity would be generated in a new fossil fuel fired power plant and heat would be generated with a fraction of the biomass that is used in the project plant and fossil fuels. A part of the biomass residues could not be used in the absence of the project and would be dumped or left to decay.

Recommendation by the Meth Panel:

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

The introduction of a new scenario in ACM0006 for this type of project activity is appropriate. The proposed approach needs some further consideration. The Meth Panel therefore recommends not to approve the request but encourages project participants to make the necessary revisions as outlined below in order to incorporate this scenario.

(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 following issues need to be addressed:

- The insertion "for any other purpose other than dumping" in the scenario B2 for the use of biomass residues is not fully clear. If it is intended that "dumping" has a different meaning than "leaving to decay", this should be further clarified and explained. Dumping of biomass residues on fields is unlikely to result in significant methane emissions, independent of the purpose why the biomass residues are left on fields. Even if the purpose is dumping, this is unlikely to result in significant methane emissions.
- The approach to calculate CO_2 emissions from the displacement of electricity is not fully appropriate. EFCP is defined in the methodology as a plant emission factor and should be replaced by a fossil fuel emission factor because EFCP already includes the efficiency of the power plant - see its determination and definition in equation (11). Equation (11) would also not be appropriate to determine the plant emission factor because it builds on historical fuel consumption and electricity generation data – which is not available for a plant that would only be constructed in the absence of the project activity. Moreover, equation (17) is confusing since the electricity generated in the project plant divided by the efficiency results in the enthalpy of the fuels fired (see definitions section of the methodology) not in electricity consumption. It is therefore to simplify the approach as follows:

$$EG_y = EG_{project\ plant,y}$$

And,

$$EF_{electricity,y} = \frac{EF_{CO2,CP}}{\varepsilon_{el,CP}}$$

Where:

$EF_{CO2,CP}$ = CO_2 emission factor of the fossil fuel type that would be used in captive power plant in the absence of the project activity

$\varepsilon_{el,CP}$ = Efficiency of electricity generation in the captive power plant that would be installed in the absence of the project activity

In addition, the methodology does not provide clear guidance how project participants should determine these key parameters ($EF_{CO2,CP}$ and $\varepsilon_{el,CP}$). The use of a "fuel efficient technology that is used in the relevant industry" or a "conventional fossil fuel electricity generation system" is not a conservative assumption because technologies that have already been installed some time ago and are currently operating in the industry are likely to be less efficient than a new, more recent technology that would be installed in the absence of the project activity. It is rather recommended to use state of the art technologies as reference. Since the level of baseline emissions depends mainly on these parameters, it is important to provide the necessary guidance, particularly taking into account the uncertainty associated with the type of fuel that would be used in the future (which may depend on fuel prices and various factors). It should be ensured that these parameters are selected in a conservative manner.

- For this type of scenario, the different quantities of biomass residue types can be clearly identified and measured. Therefore, it is recommended to provide respective guidance how to determine the different quantities $BF_{PJ,k,y}$ (page 42 of the AM).
- The equation to calculate emission reductions from displacement of heat (page 38 of the revised AM) is correct and appropriate. However, the methodology does not specify how key parameters should be determined:

  1) According to the description of the new scenario 18, εth,reference in equation (24) is the efficiency of the new boiler that would be installed in the absence of the project. However, the methodology does not specify how εth,reference should be determined. No respective table is provided in the sections "data and parameters monitored" or "data and parameters not monitored". Since no boiler is actually installed where the performance can be measured, the Meth Panel suggests project participants to use a conservative default value (e.g. 100% as used elsewhere in this methodology). Note also that εth,reference is used in the equation, whereas εth,reference,y is used in the table to the equation. Note also that εth,reference plant is a different parameter that is used elsewhere in the methodology as thermal efficiency of cogeneration plant; εboiler corresponds more closely to what is referred to here.
  2) The quantity of biomass residues that would be used in the boiler ($BF_{k,reference,y}$) is another key parameter. From the table provided on page 52 of the AM it is not fully clear how the biomass quantity that would be dumped and left to decay is separated from the biomass quantity that would be used in the boiler. As noted above, it is recommended to clearly differentiate between different types of biomass residues. With k referring to the type of biomass residue that can technically be fired in the boilers (and is not too wet), clarify that $BF_{k,reference,y}$ corresponds to the whole quantity of biomass residue type k fired in the project plant.
  3) The methodology does not specify how the (fossil) fuel type that would be used in the boiler in the absence of the project activity is identified. The respective guidance in the table on page 56 of the AM is not appropriate, as it just refers to measurements but does not explain what should be measured if nothing is fired. The fuel type used in the absence of the project activity is a key

parameter that can have a considerable uncertainty, as fuel prices may vary over time. In some cases, even biomass residues may be used in the future (e.g. purchased on the market). It is recommended to clearly outline how (possibly as part of the baseline scenario selection) the fuel type is identified. Note also that $EF_{CO2,BL,heat,i}$ is used in the equation, whereas EF_{fossil} is used in the table to the equation.

- The rewording in scenario H4 for the use of heat is not appropriate, as the emission calculation in other scenarios builds on the assumption the biomass residues used in the project would otherwise been used in the boilers.
- On page 23 of the revised AM, the word "grid" has been inserted in the title. However, this does not address the situation of the proposed project type where any on-site electricity consumption attributable to the project (e.g. for mechanical preparation of the biomass) should be accounted for as well. Project participants should develop a methodological approach to consider the effect of additional electricity consumption as a result of the project. The current equation (6a) seems not to be fully applicable to the project context.
- For the power baseline scenario of construction of a new fossil fuel fired power plant, it is recommended to take a new category (e.g. P8), because the amendment from P3 from existing plants to cover also new plants may cause misunderstandings in other scenarios where P3 is referred to.
- It should be ensured that waste from the treatment of the biomass residues (e.g. liquids from mechanical drying of the biomass residues) does not cause methane emissions when decomposing or that such emissions are estimated and taken into account.

Signature of the Meth Panel Chair 
Date: 25/01/07 *(Rajesh Sethi)*

Signature of the Meth Panel Vice-Chair 
Date: 25/01/07 *(Jean-Jacques Becker)*

Information to be completed by the secretariat	
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