

 <p style="text-align: center;">CDM: Proposed new methodology expert form (version 03) (To be used by methodology experts providing desk review for a proposed new methodology)</p>	
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Related F-CDM-NM document ID number	NM0077
<p><i>Note to those completing this form, as applicable: Please provide recommendations on the proposed new baseline and monitoring methodologies based on an assessment of annexes 3 and 4 and of their application in sections A to E of the draft CDM PDD, desk reviews and public input. Please ensure that the form is entirely filled and that arguments and expert judgements are substantiated.</i></p>	
A. Evaluation of the proposed new methodologies by desk reviewers:	
I. Evaluation of the proposed new baseline methodology:	
<p>Title of new baseline methodology:>>Fuel switching and changes in self-generation and/or cogeneration at an industrial facility.</p> <p>i. Conditions under which this methodology is applicable to other potential projects (e.g. project type, region, data availability): >>The methodology is intended for all co-generation and for changes made to fuel switching and self-generation technology.</p> <p>ii. Strengths and weaknesses of the methodology: >>Strengths. the methodology attempts to create a general approach that builds on existing approved methods. Weaknesses - the method is not clearly described and therefore open to interpretation by project developers. Additionally data is missing and thus the conservativeness of the approach is questionable. Detailed comments are provided below.</p> <p>iii. Any changes needed to improve the methodology: a. Minor changes:>> b. Major changes: >>MAJOR CHANGES</p>	
II. Evaluation of the proposed new monitoring methodology:	
<p>Title of new monitoring methodology: >>Fuel switching and changes in self-generation and/or cogeneration at an industrial facility.</p> <p>i. Conditions under which this methodology is applicable to other potential projects (e.g. project type, region, data availability): >>The methodology is intended for all co-generation and for changes made to fuel switching and self-generation technology.</p> <p>ii. Strengths and weaknesses of the methodology: >>Strengths - the methodology could be applicable to a wide variety of projects across regions, however currently it is difficult to follow and requires major changes to make it implementable (detailed comments are found within this review).</p> <p>iii. Any changes needed to improve the methodology: a. Minor changes:>> b. Major changes: >>MAJOR CHANGES</p>	

B. Details of the evaluation of the proposed new methodology by the desk reviewer:**I. Proposed new baseline methodology (specify title here):** >>Fuel switching and changes in self-generation and/or cogeneration at an industrial facility.

(1) Short description of the methodology, including an assessment of which approach from paragraph 48 of the CDM modalities and procedures was used:

a) Describe the methodology:

>>The methodology considers emissions from fuel consumption by all equipment at the industrial site, both in the baseline and the project scenarios. The method builds on CDM Executive Board approved methods and tools. The first step considers all possible baseline scenarios. The baseline scenario is selected which meets the additionality criteria as outlined in the CDM Executive Board approved tool for additionality. The methodology does not explain how a baseline is selected should more than one scenario prove to be additional.

b) State the approach selected:

>>Existing actual or historic emissions.

c) Indicate (in summary form) why the approach selected is the most appropriate. Please provide your expert judgement on the appropriateness of the selected approach to the project category:

>>The approach chosen is applicable since the project activity may involve a combination of technologies so that no single technology can be used as a reference, as required in the second option. For the same reason, each project within the proposed set of applicable project activities is likely to be unique and cannot be readily identified with “similar” project activities elsewhere. The first option “existing actual or historical emissions” involves data that are uniquely determined, so that emissions and emissions reductions can be measured.

(2) Basis for determining the baseline scenario:

a) State whether the documentation explains how the baseline scenario is to be chosen and identified:

>>The method is not fully complete, since it does not explain how to select a baseline if more than one probably scenario meets the criteria within the CDM Executive Board approved tool for additionality.

The baseline calculations refer to the approved consolidated method ACM0002, however this method was developed for renewable energy resources and the justification for applying it in the context of the proposed methodology is not clearly explained.

Methods for calculating ex ante and ex post baselines are provided, but it is not clear when one should be used instead of the other or in what situations one approach is more appropriate. More clarification on this is required.

b) State the basic underlying rationale for algorithms/formulae used (e.g. marginal vs. average basis) (see also section 4 below):

>>The rationale for algorithms and formulae are not clearly presented. It appears that averages are used for the calculation of the grid as based in ACM0002 and a marginal approach for emissions at the site. Further clarification regarding the algorithms and formulae for each of the different project types e.g. co-generation and changes in self generation and fuel switch technologies would be useful.

c) State whether the documentation explains how, through the use of the methodology, it can be demonstrated that a project activity is additional and therefore not the baseline scenario. If so, what are the tools provided by the project participants?

>>The methodology advocates the use of the Tool for the demonstration and assessment of additionality as approved by the CDM Executive Board at their 16th meeting.

d) State whether the basis for determining the baseline scenario and for assessing additionality is appropriate and adequate:

>>The basis for determining the baseline scenario is not adequate. Apart from the observations noted in 2a above, the methodology does not require the analysis of the impact of connecting a new power source to the grid according (e.g. a) assess characteristics of the new power source in terms of capacity, and longevity; b) assess the capacity of the grid; c) assess whether the demand from the grid is growing or declining). The assessment of the impact of a new power source can have an influence on the baseline calculations and can be different in different projects.

The basis for assessing additionality is adequate since the approved tool for assessing and demonstrating additionality is used.

(3) Assessment of the description of the proposed methodology and its applicability

a) State whether the methodology has been described in an adequate manner:

>>The method has not been described adequately. The methodology provides many different options for developing a baseline, but it is not clear when each method should be applied. Further clarification and guidance regarding the different baseline options and their applicability to the different applicable project types (e.g. fuel switch, cogeneration and self-generation)

Additionally, a thermodynamic analysis is recommended although a procedure for implementing such an analysis is not described. Formulae indicating a best practice conservative approach for calculating emissions using this analysis approach is necessary.

It is not easy to understand from the description how the proposed scaling factor to adjust for varied fuel consumption will be applied to the baseline. Clarification is necessary.

b) State whether the proposed methodology is appropriate for the referred proposed project

activity and the referred project context (described in Sections A-E of the draft CDM-PDD and submitted along with Annex 3):

>>Only with major changes will the methodology be appropriate.

c) State whether the application of the methodology could result in a baseline scenario that reasonably represents the anthropogenic emissions by sources of greenhouse gases that would occur in the absence of the proposed project activity.

>>Not as the methodology is currently written.

Please explain:

>>See comments above.

(4) Assessment of algorithms/formulae and type of data needed:

a) State whether the description of the methodology includes algorithms and generic formulae that can be applied to other potential project activities (if not, the proposed new methodology will be considered as a project-specific methodology):

>>The methodology does include algorithms and generic formulae that can be applied to other potential project activities.

b) Explain the spatial scope of data used to determine the baseline and whether the scope is appropriate:

>>The data covers all emissions from fuel use at the industrial site and includes fugitive methane emissions from fuel use and emissions from the transportation of supplies to the project site. The scope is appropriate.

c) Explain the vintage of data used (in relation to the duration of the project crediting period) and whether the vintage of data is appropriate, indicating the period covered by the data:

>>Fuel consumption data are required for three years prior to project implementation in order to determine ex-ante baseline and project emissions.

(5) Definition of the project boundary related to the baseline methodology:

a) State how the project boundary is defined in terms of:

i) Gases and sources

>>All gas emissions associated with fuel use and combustion are included within the project boundary. Including fugitive methane emissions and emissions from the transportation of fuels.

ii) Physical delineation

>>The project boundary could encompass the physical, geographical site of the industrial plant. If there is an energy facility at the industrial plant, where fuels are consumed to produce heat and/or electricity then it might be convenient to limit the project boundary to this energy facility. All fuels used in the baseline scenario and in the project case are included within the project boundary.

b) Indicate whether this project boundary is appropriate:

>>The project boundary is appropriate.

(6) Key assumptions/parameters (including emission factors and activity levels) and data sources:

a) List the implicit and explicit key assumptions. Identify those, if any, which are problematic and explain:

>>A scaling parameter of 3 for a combined heat and electricity output is problematic (see 6 b below)

Assume that ACM0002 can be applied to non renewable energy projects, but this is not clearly justified.

Emissions are calculated on the assumption of absolute fuel consumption in both the project and baseline case. A scaling factor can be used to account for variations in consumption but it is not clear how this should be applied to the baseline.

b) State whether the key assumptions are arrived at in a transparent manner:

>>The identification of a scaling parameter of 3 for a combined heat and electricity output appears to be totally random. Further clarification of why this scaling parameter was selected is required.

c) Give your expert judgement on whether the assumptions/parameters are adequate:

>>The assumptions and parameter are not adequate (see comments above).

d) Indicate which data sources are used and how the data are obtained (e.g. official statistics, expert judgement):

>>Carbon dioxide emissions factor per unit of fuel - National inventory or direct measurement or IPCC default values

Methane emission factor per unit energy of fuel - IPCC default values

Nitrous oxide emission factor per unit energy of fuel - IPCC default value

Baseline emission factor for grid - refer to ACM0002 or small scale methods.

e) Give your expert judgement on whether the data used are adequate, consistent, accurate and reliable:

>>It is not clear whether the ACM0002 methodology can be justifiably used for co-generation and changes to fuel switching or self generation technology projects. Further clarification on this issues is required.

To ensure conservativeness of the baseline, it is necessary to incorporate measures or guidance that ensures that emission reductions can only be claimed when the project delivers the same amount of electricity or heat as in the baseline and is not awarded emission reductions when a decrease in activity occurs.

f) State possible data gaps:

>>It would be useful if the method included data on:

1. the capacity and lifetime of the proposed co-generation and proposed changes to fuel switching & self generation technologies
2. The capacity of the grid
3. The state and trend of the grid i.e. whether there is more supply than demand or more demand than supply in the grid,

to provide a complete assessment of the power generation replacement achieved by the projects that are connected to a grid.

(7) Assessment of uncertainties:

a) State whether the methodology includes an assessment of uncertainties regarding:

i) The basis for determining the baseline scenario:

>>Uncertainties are not clearly defined.

ii) Algorithms/formulae:

>>The uncertainties in formulae and their applicability is not made.

iii) Key assumptions:

>>An assessment regarding key assumption uncertainties is not clearly made.

iv) Data:

>>An assessment of the key data used for the formulae is made.

b) State whether the uncertainties presented are reasonable:

>>The uncertainties assessed are incomplete.

(8) Leakage:

a) State how the baseline methodology addresses any potential leakage due to the project

<p><i>activity:</i></p> <p>>>Leakage calculations require estimates of fugitive methane emissions from fuel production. Since these are likely to be small compared to other components of baseline and project emissions, default values from IPCC may be chosen to make these estimates.</p> <p>Leakage calculations also require estimates of fuel consumption for fuel transport, where applicable. These need to be estimated on the basis of fuel intensity of the transport mode and distances involved, and fuel-specific CO₂ emissions factors, all based on IPCC default values. Again, this is justified since these emissions are likely to be small.</p> <p><i>b) Indicate whether the treatment for leakage is appropriate and adequate:</i></p> <p>>>The treatment of leakage is appropriate and adequate.</p>
<p>(9) Transparency and “conservativeness”:</p> <p><i>a) Indicate whether the baseline methodology was developed in a transparent way:</i></p> <p>>>The baseline has not been developed in a transparent way.</p> <p><i>b) State whether the baseline methodology is conservative:</i></p> <p>>>As the baseline is currently written it is not conservative.</p>
<p>(10) Potential strengths and weaknesses of the proposed baseline methodology (please explain):</p> <p>>>Strengths. the methodology attempts to create a general approach that builds on existing approved methods.</p> <p>Weaknesses - the method is not clearly described and therefore open to interpretation by project developers. Additionally data is missing and thus the conservativeness of the approach is questionable. Detailed comments are provided above.</p>
<p>(11) Other considerations, such as a description of how national and/or sectoral policies and circumstances have been taken into account (please explain):</p> <p>>>National and sectoral policies and circumstances are taken into account as a result of the implementation of the</p>
<p>(12) Applicability of the proposed methodology across project types and regions (please indicate):</p> <p>>>The methodology was developed so as to be applicable to co-generation, fuel switch and self generation projects in different countries.</p>
<p>(13) Any other comments:</p> <p><i>a) State whether any other source of information (i.e. other than documentation on this proposed methodology available on the UNFCCC CDM web site) has been used by you in evaluating this methodology. If so, please provide specific references:</i></p> <p>>>No other sources of information have been used.</p> <p><i>b) Indicate any further comments:</i></p> <p>>>The methodology would be improved if independent methodologies for each of the project types e.g. co-generation, self generation and fuel switching were clearly identified and seperated within the methodology. This would prevent confusion and increase accurateness and transparency.</p>
<p>II. Proposed new monitoring methodology (specify title here): >>Fuel switching and changes in self-generation and/or cogeneration at an industrial facility.</p>
<p><i>In respect of the proposed new monitoring methodology, evaluate each section of annex 4 to the draft CDM PDD. Please provide your comments section by section:</i></p>
<p>(1) Brief description of new methodology:</p> <p><i>Describe new methodology:</i></p>

>>The methodology requires the monitoring of:

- fuel used to produce heat and/or electricity for use at an industrial facility or for sale to a power grid. Emissions are directly related to fuel consumption at the industrial facility, so that only project fuel consumption needs to be monitored in order to determine project emissions.

- monitoring of emissions in the grid using the consolidated monitoring methodology ACM0002 “Consolidated monitoring methodology for zero emissions gridconnected electricity generation from renewable sources.”

An alternative approach for a dynamic baseline is also described that requires the monitoring of heat output, electricity demand, or other surrogate variable representing industrial production. The methodology AM0008 “Industrial fuel switching from coal and petroleum fuels to natural gas without extension of capacity and lifetime of the facility” is referred to as an example of how this can be done.

Leakage emissions are small and would be estimated without the need for additional monitoring.

(2) Key assumptions/parameters:

a) List the implicit and explicit key assumptions. Identify those, if any, which are problematic and explain:

>>Assumption that the methods AM0008 and AM0002 are applicable to the proposed project activities. Further justification of the compatibility of these methods is required.

Existing equipment at the industrial facility is presumed to have a lifetime longer than the crediting period of the project.

Ex-post baseline emissions may be considered fixed, based on historical data on fuel consumption trends. Again, this will not require any monitoring. This is problematic since it is unrealistic that baseline emissions will remain constant due to expected changes in production and activities over time. Therefore the scaling factor should be used in all projects.

A scaling parameter of three is used for projects that result in changes to heat and electricity generation as part of the primary energy concept. However the use of the scaling number three is arbitrary and further justification as to why three is used is required.

b) State whether the key assumptions are arrived at in a transparent manner:

>>Not all the assumptions are arrived at in a transparent manner (see comments above).

c) Give your expert judgement on whether the assumptions/parameters are adequate:

>>The assumptions and parameters require some changes.

(3) Data sources and data quality:

a) Indicate which data sources are used and how the data are obtained (e.g. official statistics, expert judgement):

>>Electricity supplied to the grid - sales data from the industrial facility or calculations

- Electricity purchased from the grid - purchase forms from the industrial facility or calculations

- efficiency of boiler at the industrial facility - measured.

Emission factors and global warming potential figures are taken from official statistics.

b) Give your expert judgement on whether the data used are adequate, consistent, accurate and reliable:

>>Data are not adequate.

c) State possible data gaps:

>> It would be useful if the method included data on:

1. the capacity and lifetime of the proposed co-generation and proposed changes to fuel switching & self generation technologies

2. The capacity of the grid

3. The state and trend of the grid i.e. whether there is more supply than demand or more demand than

supply in the grid,
to provide a complete assessment of the power generation replacement achieved by the projects that are connected to a grid.

(4) Assessment of the description of the proposed methodology and its applicability:

a) State whether the proposed methodology has been described in an adequate manner:

>>Further clarification of how to use the Thermodynamic analysis and clarification of ex post and ex ante procedures for different project types would improve the methodology.

b) State whether the proposed methodology is appropriate for the referred proposed project activity and the referred project context (described in Sections A-E of the draft CDM-PDD and submitted along with annex 4):

>>After major changes it might be appropriate.

c) State whether this proposed monitoring methodology is compatible with the proposed baseline methodology described in annex 3 of the draft CDM-PDD:

>>After major changes it could be compatible.

(5) Leakage (please elaborate, if appropriate):

>>Fugitive CH₄ emissions from fuel production and transport, and CO₂ emissions from fuel transportation are categorized as leakage. Emissions from fuel production/transportation is counted only if the fuel is produced/transported in a non-Annex I country.

Since emissions associated with leakage are very small compared with project and baseline emissions, they are estimated from IPCC default values, without any requirement for monitoring.

(6) Quality assurance and control procedures (please explain):

>>Quality assurance and control procedures are not fully defined. Further clarification is required.

(7) Potential strengths and weaknesses of the proposed monitoring methodology (please explain):

>>Strengths - the methodology could be applicable to a wide variety of projects across regions, however currently it is difficult to follow and requires major changes to make it implementable (detailed comments are found within this sheet).

(8) Applicability of the proposed methodology across project types and regions (please indicate):

>>The methodology is intended for all co-generation and for changes made to fuel switching and self-generation technology.

(9) Any other comments:

a) State whether any other source of information (i.e. other than documentation on this proposed methodology available on the UNFCCC CDM web site) has been used by you in evaluating this methodology. If so, please provide specific references:

>>No other sources of information have been used.

b) Indicate any further comments:

>>No further comments.

Signature of desk reviewer

Date: / /

Information to be completed by the secretariat

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