

 <p style="text-align: center;"><b>CDM: Proposed New Methodology</b>  <b>Meth Panel recommendation to the Executive Board</b>  <b>(version 03)</b>  <i>(To be used by the Meth Panel to make a recommendation to the Board regarding a proposed new methodology)</i></p>	
Date of Meth Panel meeting:	26 - 28 January 2005
Related F-CDM-NM document ID number (electronically available to EB members)	F-CDM-NM0073: “Fossil switching from naphtha to natural gas”
Related F-CDM-NMex document ID number(s) (electronically available to EB members)	F-CDM-NMex0073: Palabbi / Hofman
Related F-CDM-NMpu document ID number(s) (electronically available to EB members)	F-CDM-NMpu0073: Harthan
<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>	
<b>A. Final recommendations by the Meth Panel</b>	
<b>I. Recommendation on the proposed new baseline methodology:</b> <i>(checkmark the choice made)</i>	
Title of proposed new baseline methodology:>> Fossil switching from naphtha to natural gas	
<p>a. To approve this proposed methodology with minor changes</p> <p><input type="checkbox"/></p> <p>i. Conditions under which this proposed methodology is applicable to other potential CDM project activities (e.g. project type, region, data availability):</p> <p>&gt;&gt;</p> <p>ii. Minor changes:</p> <p>&gt;&gt;</p>	
<p>b. To reconsider this proposed methodology, subject to required changes</p> <p><input type="checkbox"/></p> <p>i. Conditions under which the proposed methodology is applicable to other potential projects (e.g. project type, region, data availability):</p> <p>&gt;&gt;</p> <p>ii. Required changes:</p> <p>&gt;&gt;</p> <p><i>(Project participants shall make required changes to the proposed new methodology and send it back to the Meth Panel. The proposed new methodology will be reconsidered by the Meth Panel if changes required are made by the project participants. The Executive Board will only consider this proposed new methodology after the revised proposed methodology has been reconsidered by the Meth Panel.)</i></p>	

## c. Not to approve the proposed methodology



## i. Reasons for non-approval:

>> The methodology is not transparent and not conservative. It has a number of gaps and is not a stand-alone methodology to provide adequate information for review. Major reasons for non-approval include the following;

## 1. Weak baseline analysis

- The methodology assumes as a baseline scenario the continued use of naphtha as the primary electricity generation fuel. The methodology does not explore other alternatives, and indicates that that under certain circumstances, naphtha will continue to be used, (when natural gas is deemed too expensive). The methodology therefore fails to underscore contrast adequately baseline scenario and to what extent naphtha will still be used in the CDM project scenario.
- Analysis on other users of natural gas has not been given. The methodology mentions availability of natural gas as an uncertainty, and goes on to assume that there will be adequate supply of natural gas for power generation (a contradiction). Non-availability of gas suggests leakage problems.

## 2. Inadequate additionality analysis

- Although the methodology mentions the possible use of the "Tool for the demonstration and assessment of additionality" agreed by the Executive Board it does not provide for how the tool is applied in conjunction with the baseline methodology (e.g. selection of alternative scenarios).

## 3. Leakage analysis

- Uncertainty on adequate supply of natural gas has a potential for leakage but this has not been discussed by the methodology.
- The methodology incorrectly discusses fugitive emissions under leakage

## 4. Project emissions

- The methodology assumes explains that a pipeline network for the project will be constructed but fugitive emissions are assumed to be negligible. The basis for such assumption has not been given, considering the high GWP of vented or flared gas in when necessary, for pipeline maintenance, etc.
- The methodology does not account for emissions during the construction phase

## 5. Emission reduction formulae/algorithms

- The methodology does not give information and justification on variables and fixed parameters used in the formulae/algorithms to allow for assessment of accuracy and conservatism.
- Although the methodology references AM0008, emission reductions in the methodology are based on quantity of fuels used rather than a common unit of output (in this case electricity), as in AM0008. This gives incorrect estimation of emission reduction.

Other reasons for non approval:

6. The methodology does not mention gases to be considered in the project boundary
7. The methodology explains a wrong approach to conservatism, e.g non-consideration of fugitive emission is regarded as being conservative.

*(A new proposal should be submitted in accordance with the procedures for submission and consideration of proposed new methodologies of the Executive Board.)*

<b>II. Recommendation on the proposed new monitoring methodology: (checkmark the choice made)</b>
Title of proposed new monitoring methodology: >> Fuel switching from naphtha to natural gas in power plant project without extension of capacity and lifetime of the facility
a. To approve this proposed methodology with minor changes <input type="checkbox"/> <div style="margin-left: 40px;">           i. Conditions under which methodology is applicable to other potential projects (e.g. project type, region, data availability):            &gt;&gt;            ii. Minor changes:            &gt;&gt;         </div>
b. To reconsider this proposed methodology, subjected to required changes <input type="checkbox"/> <div style="margin-left: 40px;">           i. Conditions under which the proposed methodology is applicable to other potential projects (e.g. project type, region, data availability.):            &gt;&gt;            ii. Required changes:            &gt;&gt;  <i>(Project participants shall make required changes in the proposed new methodology and send it back to the Meth Panel. The proposed new methodology will be reconsidered by the Meth Panel if changes required are correctly made by the project participants. The Executive Board will only consider this proposed new methodology after required changes proposed have been made and the revised proposed methodology has been reconsidered by the Meth Panel.)</i> </div>
c. Not to approve the proposed methodology <input checked="" type="checkbox"/> <div style="margin-left: 40px;">           i. Reasons for non-approval:            &gt;&gt; The methodology needs to monitor conditions under which the baseline scenario is applicable. The baseline methodology on this case has been inadequately prepared.   <i>(A new proposal should be submitted in accordance with the procedures for submission and consideration of proposed new methodologies of the Executive Board.)</i> </div>
<b>B. Details of the evaluation of the proposed new methodology by the Meth Panel:</b>
<b>I. Proposed new baseline methodology (specify title here): &gt;&gt; Fossil switching from naphtha to natural gas</b>
<b>(1) Short description of the methodology, including an assessment of which approach from paragraph 48 of the CDM modalities and procedures was used:</b>  a) Describe the methodology: >> The Methodology proposed involves CO <sub>2</sub> emissions through fuel switching in a power plant. The project consists of an investment to switch from naphtha to natural gas in an environment where there is inadequate supply of natural gas. b) State the approach selected: >> Approach as per paragraph 48 (a) of the CDM modalities and procedures: "Existing actual or historical

emissions, as applicable”.

*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:*

>> This approach is appropriate since existing or historical emissions are avoided by switching to a relatively cleaner fossil fuel.

## **(2) Basis for determining the baseline scenario:**

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

>> The methodology explains the baseline scenario as the continued use of naphtha as the primary electricity generation fuel, and natural gas as a lesser fuel. However, the documentation at some other point indicates continued use of naphtha or other fuels like coal. This context has to be reflected in the baseline scenario analysis in order to paint a clear picture on non-continuation of baseline conditions.

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

>> In the determination of emission reductions, the methodology uses IPCC emission factors for naphtha and natural gas. The methodology has not explained the numerical IPCC factors to be used.

*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 has touched on a number of general additionality issues without going into detail in using the methodological tool for assessing additionality. It is not indicated for example, whether use of natural gas does not present the most economical and profitable situation to the project proponent (investment analysis).

In addition, the common practice analysis does not give sufficient information. While it is indicated that gas based generation stands at 25%, it does not provide any analysis of what constitute the remaining 75% in terms of type of power plants and capacities.

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

>> No, the basis for determining the baseline scenario and for assessing additionality are both not appropriate and adequate.

The baseline is described as the scenario in which the same amount of naphtha is consumed as in the last three years before implementation of the fuel switch. The methodology has not put into context a common unit of emission for the baseline and project scenario, but rather uses quantities of fuel used in the baseline and project scenario as the basis for emission reduction potential. This approach does not take into account possible changes in power production volume, and thus the emission reductions should be described relative to power production as applied in the referenced AM0008, where heat output is the common denominator.

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

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

>> Not adequate.

*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):*

>> In principle the proposed methodology could be appropriate for the proposed project, provided it is significantly revised.

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 in its current state.

Please explain:

>> The Methodology would need to be clear on the following issues, which are salient on the Methodology;

- Use of naphtha and natural gas as the baseline scenario
- Use of natural gas as the CDM project scenario
- Effect of continued use of naphtha in the project scenario
- Emission reduction effect on the basis of a common product output rather than quantity of fuel used in the baseline and project scenario

#### **(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):

>> After appropriate revision, referencing on AM008 it can be applicable to other potential project activities involving fuel switching from naphtha to natural gas.

Further, use of Plant Load Factor in the formulas is not clear. In some cases it has been explained without being used, where as in other places it is not indicated why it has been omitted in a similar formula.

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

>> Most data used to determine the baseline are collected on site of the existing plant. Also IPCC default data are used as appropriate. The spatial scope of the data 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:

>> Consumption of naphtha for determining baseline emission is ex-post based on three years prior to project commencement. Natural gas consumption will also be ex-post, covering a period of 1 year.

#### **(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

>> CO<sub>2</sub> from combustion of natural gas

ii) Physical delineation

>> According to the proponent the project boundary encompasses the following:

- The physical, geographical site of the plant under the management control of the Project Partners/ Sponsors;
- Activities and facilities one step upstream and one step downstream of the facilities set up as part of the project activity, if these are under control of the project participants;

The project boundary is applicable both for the baseline analysis and for monitoring of emissions following project implementation and emissions reductions.

b) Indicate whether this project boundary is appropriate:

>> Generally, the project boundary is appropriate. The main issue of concern is the pipeline network for transporting gas to the project area. This aspect of project boundary has not been clearly explained and properly treated.

**(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:*

>> Key parameters include the base year, gross calorific value (GCV), emission factors, natural gas consumption, naphtha consumption. It is not clear how GCV is determined.

1. Implicit assumptions

- Pipeline fugitive emissions will be zero
- Project will not result in leakage even with implied lack of availability of gas

2. Explicit assumptions:

- Natural gas is adequately available for power generation in a country or regional scenario;
- During the project activity, natural gas would be transported through pipeline, and fugitive emissions will be negligible as compared to the baseline/ project emissions;
- IPCC default emission factor for naphtha and natural gas is applicable to a country situation where the project would occur; and
- There are no additional economic benefits on account of the project activity.

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

>> No transparent justification for the assumptions has been given

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

>> Not adequate

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

>> The CO<sub>2</sub> emission factors are obtained from the IPCC (1996). All other data are obtained ex post by the plant operator.

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

>> Data for determining baseline and project emissions is not adequate. If based on the sources mentioned data will be accurate and reliable. Use of IPCC factors is consistent.

*f) State possible data gaps:*

>>

- Baseline data on use of naphtha and natural gas for electricity generation.
- Details of individual power stations are not available that contribute to important information, like generation electricity portfolio is lacking
- Data on attributes of the pipeline, in terms of capacity, length and other parameters necessary for computing fugitive emissions
- Emission factor based on energy consumption to power output
- Investment analysis data

**(7) Assessment of uncertainties:**

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

i) The basis for determining the baseline scenario:

>> Yes, the following uncertainties are mentioned:

- Likely changes in regulations or policies at country level requiring use of any other type of fuel instead of natural gas.
- Costs of natural gas may rise to prohibitive levels due to increases in the global market making the project activity unviable in the future.
- Likely change in the supply/ demand situation for natural gas.

ii) Algorithms/formulae:

>> No

iii) Key assumptions:

>> No

iv) Data:

>> No

b) State whether the uncertainties presented are reasonable:

>> Yes, within the context of the only uncertainties stated, on baseline scenario.

**(8) Leakage:**

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

>> The Methodology does not provide any concise analysis of leakage.

b) Indicate whether the treatment for leakage is appropriate and adequate:

>> Not appropriate.

**(9) Transparency and “conservativeness”:**

a) Indicate whether the baseline methodology was developed in a transparent way:

>> Not transparent, issues such as leakage and baseline scenario should be described more clearly.

b) State whether the baseline methodology is conservative:

>> Not conservative in that it provides very little information on issues that need adequate coverage and neglects significant factors like use of natural gas in the baseline scenario and pipeline emissions.

**(10) Potential strengths and weaknesses of the proposed baseline methodology (please explain):**

>>

Strengths:

- Use of verifiable data for emission reductions
- Methodology can build from approved methodology (AM008)

Weaknesses:

- Methodology is inadequately explained, with weak analysis of baseline scenario, additionality and leakage
- The methodology is not transparent and conservative. In areas of computations it is not how results were obtained as data has not been explained or shown



<p><b>(11) Other considerations, such as a description of how national and/or sectoral policies and circumstances have been taken into account (please explain):</b></p> <p>&gt;&gt; Legal framework and policy for fuel choice in electricity generation have been briefly mentioned.</p>
<p><b>(12) Applicability of the proposed methodology across project types and regions (please indicate):</b></p> <p>&gt;&gt; This methodology is applicable to emission reductions due to fuel switch, (adapted from AM 008), where:</p> <ul style="list-style-type: none"> <li>• The local regulations/ programs do not constrain the facility from using higher GHG intensive fuels like coal or any other fuel and fuel switching is purely voluntary activity;</li> <li>• A switch from one fuel to another involves additional capital investments</li> <li>• The facility would not have major efficiency improvements during the crediting period or any integrated process changes except whatever is required for the fuel switch; and</li> <li>• The project activity does not increase the capacity of final outputs and lifetime of the existing facility during the crediting period (i.e. this methodology is applicable up to the end of the lifetime of existing facility if shorter than crediting period).</li> </ul>
<p><b>(13) Any other comments:</b></p> <p>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:</p> <p>&gt;&gt; AM0008.</p> <p>b) Indicate any further comments:</p> <p>&gt;&gt; No further comments.</p>
<p><b>II. Proposed new monitoring methodology (specify title here): &gt;&gt; Fuel switching from naphtha to natural gas in power plant project without extension of capacity and lifetime of the facility. (Monitoring Methodology)</b></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><b>(1) Brief description of new methodology:</b></p> <p>Describe new methodology:</p> <p>&gt;&gt; The proposed new monitoring methodology is based on actual measurements or monitoring of parameters that will be required to calculate the annual emission reductions. The parameters to be monitored include;</p> <ul style="list-style-type: none"> <li>• Natural gas and naphtha consumption of the plant on an annual basis.</li> <li>• Gross Calorific Value of naphtha and natural gas</li> <li>• Power load factor (PLF)</li> <li>• Gross Calorific Value of natural gas and naphtha</li> <li>• Plant Load Factor</li> </ul>
<p><b>(2) Key assumptions/parameters:</b></p> <p>a) List the implicit and explicit key assumptions. Identify those, if any, which are problematic and explain:</p> <p>&gt;&gt; Assumptions stated in the draft CDM-PDD:</p> <p>Explicit assumptions as stated</p> <ul style="list-style-type: none"> <li>• The project activity does not increase quantum of power delivered to the grid;</li> </ul>



<ul style="list-style-type: none"> <li>• The data required for the methodology can be monitored using available on-site project monitoring facilities; and</li> <li>• No major efficiency improvements or any integrated process changes are expected during the crediting period of the project activity.</li> </ul> <p><i>b) State whether the key assumptions are arrived at in a transparent manner:</i></p> <p>&gt;&gt; Yes, but it is not clear how the monitoring of gross calorific values for naphtha and natural gas will be undertaken</p> <p><i>c) Give your expert judgement on whether the assumptions/parameters are adequate:</i></p> <p>&gt;&gt; Not adequate, they need to include fugitive emissions. Monitoring of fugitive emissions would be necessary, even in the case of a valid assumption of negligibility.</p>
<p><b>(3) Data sources and data quality:</b></p> <p><i>a) Indicate which data sources are used and how the data are obtained (e.g. official statistics, expert judgement):</i></p> <p>&gt;&gt; Data sources explained to come from plant records and IPCC, by recording, measuring and estimating</p> <p><i>b) Give your expert judgement on whether the data used are adequate, consistent, accurate and reliable:</i></p> <p>&gt;&gt; Not adequate.</p> <p><i>c) State possible data gaps:</i></p> <p>&gt;&gt;</p> <ul style="list-style-type: none"> <li>• Robust emission factors for electricity generation relative to fossil fuel consumption.</li> <li>• Monitoring fugitive emissions.</li> </ul>
<p><b>(4) Assessment of the description of the proposed methodology and its applicability:</b></p> <p><i>a) State whether the proposed methodology has been described in an adequate manner:</i></p> <p>&gt;&gt; Description is adequate.</p> <p><i>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):</i></p> <p>&gt;&gt; Yes, if gaps mentioned are addressed.</p> <p><i>c) State whether this proposed monitoring methodology is compatible with the proposed baseline methodology described in annex 3 of the draft CDM-PDD:</i></p> <p>&gt;&gt; Compatible within the limits of the baseline methodology (Baseline methodology needs adequate coverage).</p>
<p><b>(5) Leakage (please elaborate, if appropriate):</b></p> <p>&gt;&gt; Not analysed.</p>
<p><b>(6) Quality assurance and control procedures (please explain):</b></p> <p>&gt;&gt; Quality control (QC) and quality assurance (QA) procedures are assumed to be sufficiently covered under the ISO:9001: 2000 or similar quality management standards that should be applied by the project proponent. However, uncertainty level for all parameters has been described as being low.</p>
<p><b>(7) Potential strengths and weaknesses of the proposed monitoring methodology (please explain):</b></p> <p>&gt;&gt;</p> <p><u>Strengths:</u></p> <ul style="list-style-type: none"> <li>• The use of measured data will ensure high accuracy of the monitored variables.</li> </ul>

- Data needs are reasonably low and manageable.

Weaknesses:

- Leakage is assumed to be zero, but this is not conservative
- Uncertainty level on QC and QA is low

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

>> [The methodology is applicable across regions if gaps identified are addressed.](#)

**(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:*

>> [None.](#)

*b) Indicate any further comments:*

>> [No further comments.](#)

Signature of Meth Panel Chair .....

Date: 9/02/2005

 (Jean-Jacques Becker)

Signature of Meth Panel Vice-Chair .....

Date: 9/02/2005

(José Miguez)

**Information to be completed by the secretariat**

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