



CDM: Proposed New Methodology
Meth Panel recommendation to the Executive Board
(version 04)

*(To be used by the Meth Panel to make a recommendation to the Board
regarding a proposed new methodology)*

Date of Meth Panel meeting:	17 - 19 October 2005
Related F-CDM-NM document ID number (electronically available to EB members)	F-CDM-NM0128: "Modal shifting in industry for transport of product/feedstocks"
Related F-CDM-NMex document ID number(s) (electronically available to EB members)	F-CDM-NMex0128: Gruetter / Ribeiro
Related F-CDM-NMpu document ID number(s) (electronically available to EB members)	F-CDM-NMpu0128: None received

Note to those completing this form, as applicable: Please provide recommendations on the proposed new baseline and monitoring methodologies based on an assessment of CDM-NMB and CDM-NMM 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.

A. Final recommendations by the Meth Panel

I. Recommendation on the proposed new baseline methodology: (checkmark the choice made)

Title of proposed new baseline methodology:>> Baseline methodology for modal shifting in industry for product/feedstocks

a. To approve this proposed methodology with minor changes

☐

i. Conditions under which this proposed methodology is applicable to other potential CDM project activities (e.g. project type, region, data availability):

>>

ii. Minor changes:

>>

b. To reconsider this proposed methodology, subject to required changes

☐

i. Conditions under which the proposed methodology is applicable to other potential projects (e.g. project type, region, data availability):

>>

ii. Required changes:

>>

(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.)

c. Not to approve the proposed methodology



i. Reasons for non-approval:

>> The proposed methodology is clearly presented and laid out. However, it has some significant gaps, outlined below.

- **Baseline scenario:** No procedure to determine the baseline scenario is given. Rather, the methodology assumes that the baseline scenario is the continuation of the current transport mode (and implicitly assumes that efficiency and load factors remain identical during the project lifetime). A change in possible transport mode, efficiency, and load factor should also be considered;
- **Erroneous/unjustified assumptions:** The methodology assumes that all emission reductions are due to modal changes in transport for feedstocks/raw materials. However, transport-related emission reductions could also occur if there were process changes in the plant requiring feedstocks/raw materials, or if this plant reduced its output (or changed its mix of outputs). Neither of these factors is accounted for in the proposed methodology, but should be. This may require a major change of the methodology, and introduction of new equations indicating how transport emissions can be linked to plant outputs;
- **Vintage of data used to determine the baseline:** The methodology uses one year's data as sufficient for determining the baseline. This should be extended to three;
- **Errors in formulae:** The J/Cal conversion factor is not needed in formula using heating values expressed in SI units.

Other required changes:

- The methodology is drafted so as to be very project-specific. It should be redrafted in a more generic manner;
- Applicability conditions should be consistent between the CDM-NMM and CDM-NMB.

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

II. Recommendation on the proposed new monitoring methodology: (checkmark the choice made)

Title of proposed new monitoring methodology: >> [Monitoring methodology for modal shifting in industry for product/feedstocks](#)

a. To approve this proposed methodology with minor changes



i. Conditions under which methodology is applicable to other potential projects (e.g. project type, region, data availability):

>>

ii. Minor changes:

>>

b. To reconsider this proposed methodology, subjected to required changes



i. Conditions under which the proposed methodology is applicable to other potential projects (e.g. project type, region, data availability.):

>>

ii. Required changes:

>>

(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.)

c. Not to approve the proposed methodology



i. Reasons for non-approval:

>> Because of the changes required in the baseline methodology, the monitoring methodology would need significant changes before it could be approved. Further, it is assumed that any project proponent using the methodology will have a “quality and environmental management system that assures all necessary records are kept and procedures established for all data, including procedures for monitoring, measuring and calibrating equipment used to conduct these activities”. However, no information is given on what this system is, how it should be verified whether such a system is in place.

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

B. Details of the evaluation of the proposed new methodology by the Meth Panel:

I. Proposed new baseline methodology (specify title here): *Baseline methodology for modal shifting in industry for product/feedstocks*

(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 is designed for projects that use a more efficient transportation mode to bring an individual feedstock or product to a plant. Thus, the methodology is an evaluation of CO₂ emissions reduction due to the transport modal shift. It includes the following steps:

1. Procedure to determine the baseline scenario – an assumption of continuing business as usual mode, and associated quantity of goods transported and transportation efficiency is made, but these are not justified. No procedure/methodology to assess the baseline scenario is outlined.
2. Additionality is assessed by using the Executive Board approved “Tool for the demonstration and assessment of additionality”.
3. Given the (inappropriate) assumptions in 1. above, calculating baseline and project emissions is relatively straightforward. However, there are errors in calculating CH₄ and N₂O from fuel combustion.
4. No leakage is assumed.

The methodology does not include a link between the amount of feedstock/raw material transported, and the amount of product produced by the project-site plant. This is problematic, as it could allow projects to generate credits by reducing plant output, rather than increasing the efficiency of raw material/feedstock transport to the project.

b) State the approach selected:

>> The approach selected is 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:

>> The justification used in the baseline methodology document for why 48 (b) is not applicable is erroneous. The methodology must determine which alternatives are potentially viable and it cannot be pre-fixed that the only viable alternatives are the project activity or a continuation of current practices. 48 (b) as well as 48 (c) might be appropriate approaches as in any country there exist alternative transport modes to road transport (including train, ship). The project activity in reality is simply using non-road based freight transport. Due to existing data limitations and the complexity of comparing transport mode decisions of different actors usage of the approach 48 (a) is, however, the most appropriate.

(2) Basis for determining the baseline scenario:

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

>> No. The methodology states that the current method of transport is the baseline. A methodology, however, must provide the instruments to determine what would be the baseline scenario offering a means to evaluate what are the baseline scenario options (transport mode, efficiency, quantities). This is missing from the methodology.

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

>> It is based on fixed rates for transport emissions per unit of baseline fuel/raw material consumption.

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 refers to the "Tool for the demonstration and assessment of additionality", which is appropriate. However, this should not be supplemented with project-specific information (although it can be augmented with information relevant to the project type).

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

>> Additionality: yes

Baseline scenario: no – as no procedure is given.

Calculating emission reductions: no, because of possibility of inappropriate baseline scenario, and errors in equations used to calculate CH₄ and N₂O from fuel combustion.

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

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

>> No, the methodology lacks fundamental elements, seeming to be part of the correspondent draft CDM-PDD and not a means to provide guidance to project activities aiming at transport modal shifting.

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 CDM-NMB):

>> The proposed project activity is a freight switch from road to barges. The proposed methodology, once modified as suggested, would be appropriate for this type of project activity.

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.

>> No.

Please explain:

>> The methodology does not propose how to identify the baseline scenario. The methodology simply assumes that current practices is the baseline scenario, and the transport mode, efficiency and load factor

will remain unchanged during the project's lifetime. However the project activity (changing the transport mode) might well be the more appropriate baseline scenario i.e. the methodology does not necessarily lead to the most probable baseline scenario. In the draft CDM-PDD in the section on additionality, project specific details are provided, generalising these factors might lead to a baseline methodology.

(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):

>> Yes, although additions and modifications are also needed. In particular, the methodology is too project-specific - referring e.g. in D6 to trucks as baseline. This is not necessary. The methodology could be simply mode switch in freight from one mode of transport to another mode – latter being less GHG intensive. By relating the methodology to specific modes of transport it loses scope and becomes a project specific methodology.

Formulae used are not generic but based on the project example in the draft CDM-PDD.

The methodology does not clearly state a formulae neither for calculating baseline nor project emissions (presumably it involves an addition of the individual steps, but this is not made explicit).

While the text (page 12, CDM-NMB) refers to emissions being adjusted to production levels no formula is presented in the CDM-NMB to show how this will be done. Indeed, the bulk of the proposed methodology focuses on total emissions from transport, irrespective of project-site plant output. However, a clear cut formula is essential, as the baseline as well as project emissions of course need to be related to output levels. The methodology should establish a baseline emission factor per unit of output. Based on the units of output the absolute baseline emissions are then calculated during project implementation and the associated emission reductions.

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

>> The spatial scope is travelling from A to B. This 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:

>> The vintage of data used is not appropriate: it determines the baseline from one year's data.

(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

>> CO₂, CH₄ and N₂O emissions from fossil fuel combustion.

ii) Physical delineation

>> The physical delineation is the roadway from the plantations to the loading facility for the ocean-going barges, the transport of the product/feedstock via the barges to the unloading facility, and the unloading of the product/feedstock and transport into the plant.

b) Indicate whether this project boundary is appropriate:

>> Yes, although emissions of CH₄ and N₂O could also be excluded from the project boundary as they are a minor component of total emissions.

(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:

>>

- The methodology assumes that no other alternative transport modes exist except continuation with road transport and the project activity alternative. Problematic, as other potential baseline scenarios need to be defined;
- Fixed default parameters for CH₄ and N₂O are assumed. Since these emissions are such a small percentage of the total, they could be excluded from the project boundary;
- The current mode, efficiency and load factor of transport continues (data is derived on a continuous base from the latter) over the project crediting period. This is problematic, as it does not account for changes including possible autonomous efficiency improvements;
- Changing levels of product output, or an alteration of processes in the project site will not require adjustments to emission reductions. This is problematic and should be revised.

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

>> No.

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

>> No – see above.

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

>> IPCC emission factors have been used for transport fuels. Heating values of fuels were taken from a Brazilian national source (the methodology is not specific to Brazil, although this is where the associated project activity occurs).

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

>> The methodology developers need to decide whether the methodology is to apply to a) Brazil only and/or b) modal switch from road to barges only, and develop appropriate formulae and use appropriate data sources.

f) State possible data gaps:

>> In addition to the problematic assumptions and associated data gaps outlined in a) above, there are other data gaps. These are:

- The methodology does not state if round-trips shall be used. This is an important factor that the methodology should establish. Some modes of transport might only be used for specific types of goods. Trucks might, for example, transport for one company goods from A to B and for another company other goods from B to A. Accounting for return trips would thus not be required. On the other hand if trucks return empty as no other cargo is available or the units cannot handle other products then the project activity needs to account for return-trip emissions. A mode-switch from (flexible, small) trucks to (large, inflexible) barges might mean that for trucks, other goods are found for the return trip but not for the barges. For the former, only one-way fuel consumption would thus need to be accounted for but for the latter, return-trip consumptions should also be accounted for. The methodology needs to address this aspect;
- The methodology does not state how the fuel consumption of specific modes of transport are obtained. While this is more or less clear in the presented project activity, the methodology should establish a procedure to measure either the fuel consumption or how to establish alternatively a default factor. Especially for barges, and river as well as sea-transport also, the average consumption should be based on return trips, even if the barge transports other commodities the other way, as fuel consumptions down the river are much lower than counter-current. To account only for one way would be misleading as the ship/barge is obliged to return again to take on the load;
- If the methodology would use fixed baseline emission rates then it would need to incorporate a technology improvement rate to remain conservative.

(7) Assessment of uncertainties:

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

i) *The basis for determining the baseline scenario:*

>> No.

ii) *Algorithms/formulae:*

>> No.

iii) *Key assumptions:*

>> No uncertainty in the main key assumptions (e.g. that the level of project output does not decrease) are presented. However, some uncertainties as to the inclusion of CH₄ and N₂O are included.

iv) *Data:*

>> No.

b) *State whether the uncertainties presented are reasonable:*

>> This can only be assessed when the significant gaps in the uncertainties presented have been filled.

(8) Leakage:

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

>> No negative leakage is assumed to occur. "Positive leakage", i.e. a reduction in transport fuel deliveries to the project site is expected, but not accounted for.

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

>> The treatment of leakage in transport fuel deliveries is a conservative approach, and appropriate.

(9) Transparency and "conservativeness":

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

>> No – there are many implicit assumptions (outlined in 6 above), and the assumption of the baseline scenario is also not justified.

b) *State whether the baseline methodology is conservative:*

>> No, because it is not really a methodology, the assumed baseline scenario may be inaccurate, and the issues of efficiency, round trips and load factors are not addressed.

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

>>

Strengths:

- simple;
- potentially widely applicable.

Weaknesses:

- has significant data and methodological gaps (outlined above); and
- is too project-specific.

Other weaknesses are highlighted above.

(11) Other considerations, such as a description of how national and/or sectoral policies and circumstances have been taken into account (please explain):

>> Although the methodology indicates that national and/or sectoral policies are taken into account, this does not seem to be the case – as the assumed baseline scenario is a continuation of existing activities (which may or may not have been influenced by policy).

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

>> Potentially wide, after suitable modifications are made.

(13) 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:

>> Formulas are presented in an inadequate way and formulas provided to calculate CH₄ and N₂O are incorrect. The number 4.1868 is the converting factor from calories to Joules, and is not required as LHVs are already provided in SI units.

To facilitate understanding, all emission factors should be expressed on the same basis. CO₂ emission factor should be used instead of Carbon emission factor as proposed for methane and nitrous oxide.

Formulas should use symbols instead of phrases and the symbols should be defined before presenting the formulas.

A dimensional analysis could be provided instead of using adjustment factors for M (Mega), etc. As an example the correct equation to methane emission is provided ("i" represents the different fuels considered):

$$M_{CH_4}[kg_{CH_4}/month] = ? (M_{fuel, i} * LHV_i * EF_{CH_4, i}) \quad [kg_{fuel, i}/month * kJ/kg_{fuel, i} * kg_{CH_4, i}/kJ].$$

II. Proposed new monitoring methodology (specify title here): >> Monitoring methodology for modal shifting in industry for product/feedstocks

In respect of the proposed new monitoring methodology, evaluate each section of CDM-NMM to the draft CDM-PDD. Please provide your comments section by section:

(1) Brief description of new methodology:

Describe new methodology:

>> The proposed monitoring methodology corresponds to the baseline methodology, and thus is over-simplified with several data gaps. It focuses on monitoring the product/feedstock transported and the fuel consumption of alternative transportation mode (this should be "modes") in the project activity and baseline case. There are two other problems to those already outlined in the baseline methodology:

- The methodology indicates that it will annually monitor the amount of fuel transported by the existing transportation mode. How is this possible if the methodology is designed for projects that switch transportation modes? (Should it be assumed that the old mode of transport continues to operate with a lower intensity? If this is the case then the impact of potentially lower load factors in transporting feedstocks/raw materials using the old mode of transport should be assessed in the leakage section of the baseline scenario).
- The CDM-NMM indicates that "a quality and environmental management system assures that all necessary records are kept and procedures established for all date, including procedures for monitoring...". This needs to be further clarified.

(2) Key assumptions/parameters:

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

>> Explicit:

- Data is available and collected;
- The project proponents must have a comprehensive Environmental Management System registering and

storing all necessary data.

Implicit (in addition to the implicit assumptions outlined in the baseline methodology):

- Data are collected according to best international standards and are reliable and traceable.

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

>> Yes for explicit assumptions.

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

>> More information on what is needed in the Environmental Management System.

(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):*

>>

- Fuel consumption baseline and project activity mode of transport (proprietary, measured);
- Quantity of product transported (proprietary, measured) for project activity and baseline emissions;
- Heating values and specific weight of fuels from Brazil according to national official data;
- Emission factors for CO₂, CH₄ and N₂O from IPCC.

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

>> Since national values (specific country values) for fuel properties are provided, CO₂ emission factor [kg/kJ] based on national values should also be selected instead of IPCC factors.

c) *State possible data gaps:*

>> Fuel consumption per vehicles, fleet details as well as operational details of the fleet, both for the baseline and project scenario.

(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:*

>> No.

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 CDM-NMM):*

>> Not without significant modifications.

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

>> Yes, but both need modification.

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

>> Not expected in the project activity.

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

>> Some QA/QC procedures will be undertaken "based on the project participant's management system". No further explanations are given. The methodology should state how QA is assured in the context of this specific methodology.

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

>> Weaknesses:

- Project specific and not applicable in general. It is basically a project document and not a methodology;

- No QA procedures proposed;
- Country and not methodology specific default values are taken.

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

>> Theoretically such a methodology would be widely applicable across sectors and regions. However, significant modifications to the methodology would be needed as outlined above before it could be applied.

(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: 24/10/05

(Jean-Jacques Becker)



Signature of Meth Panel Vice-Chair

Date: 24/10/05

(José Miguez)

Information to be completed by the secretariat

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