CDM: Proposed new methodology expert form (version 04)

(To be used by methodology experts providing desk review for a proposed new methodology)

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Related F-CDM-NM document ID number	NM0099

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. Evaluation of the proposed new methodologies by desk reviewers:

I. Evaluation of the porposed new baseline methodology:

Title of new baseline methodology:>>

Energy Efficiency Improvement in Process and Manufacturing Industries

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

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The methodology claims to be applicable to industrial energy efficiency projects (electricity and thermal energy) in a wide range of project types (sector 4,5,8,9).

No application restrictions are defined regarding geographical regions or data availability.

The methodology excludes improvements which result from a change in product or fuel mix, and also excludes projects that are mandated by law. However, the formulas and the additionality test do explicitly define exception for such cases. This is unnecessarily confusing future users.

While excluding emission reductions resulting from a change in product mix, the project claims to be also applicable to projects that undergo an energy relevant mix of products. But the methodology lacks substantiating this claim (p.13).

ii. Strengths and weaknesses of the methodology:

>>

Strengths:

In total, this methodology must be considered flawed. However, there are a few conservative elements in the formula to define emission reductions:

- Sensitivity analysis in step 2 of the additionality test in section D.3;
- Definition of specific carbon emission attributable to the project in period t (formula (5)). This excludes the effect of future improvements in efficiency not attributable to the CDM project activity;
- Definition of production level used for emission reduction calculations (parameter aQ_t, p. 14).

Major weaknesses include:

- The methodology is poorly documented. It apparently contains several serious mistakes, wrong references and inconsistencies (for details see B.I.(3)).
- Although the additionality test looks valid and similar to the EB's additionality tool at first glance, it is clearly not acceptable. As an illustration we can imagine a (even without CER revenues) highly profitable project activity facing no relevant barrier. Such a project

activity would pass the proposed "additionality test" if it is financed by an energy service company;

- The used approach §48(a) is not the most appropriate for this kind of project activity;
- It is neither conservative nor credible because it assumes a baseline with a constant total emission factor throughout the crediting period of the proposed project activity if no new mandatory regulations are introduced.

iii. Any changes needed to improve the methodology:

a. Minor changes:>>

- B.I (5) i) does not clearly specify whether CO2 emissions resulting from power generating electricity, which is bought by the project proponent from the grid is inside or outside the project boundary. This needs further clarification.

b. Major changes:>>

- This methodology needs a careful and comprehensive redrafting. Especially sections D.6 and D.7 have to be corrected and completed (e.g. formula referred to for accounting for product mix changes) before a substantial review is possible.
- Re-consider using approach 48.b) or c);
- Provide an additionality test without unnecessary loopholes;
- Account for current and future trends regarding energy efficiency improvement in the relevant sector. For the baseline selection, include a scenario in which the energy efficiency is increasing to a lower degree than in the CDM project case;
- Elaborate on the "approximated operating margin" in more detail or, preferably, refer to already approved methodologies dealing with emission factors of grid electricity.

II. Evaluation of the proposed new monitoring methodology:

Title of new monitoring methodology: >>

Energy Efficiency Improvement in Process and Manufacturing Industries

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

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Same as for baseline methodology, see A.I.i).

ii. Strengths and weaknesses of the methodology:

>>

Strengths:
None identified

Weaknesses:

- The methodology is poorly documented. It apparently contains several serious mistakes, wrong references and inconsistencies (for details see BI.(3)).
- Detailed data to calculate the "approximated operating margin" is not monitored. If there are no usable official emission factors for grid electricity available, it is paramount to monitor data that allows for estimating "approximated operating margin".
- No parameter is monitored with regard to the product-mix of the plant.
- No QA/QC procedures are proposed.

iii. Any changes needed to improve the methodology:

a. Minor changes:>>

b. Major changes:>>

- This methodology needs a careful and comprehensive redrafting;
- Define monitor parameters to calculate the "approximated operating margin";
- Define monitor parameters with regard to the product-mix of the plant;
- In general, the monitoring methodology must be amended in accordance with the changes required for the baseline methodology.

B. Details of the evaluation of the proposed new methodology by the desk reviewer:

I. Proposed new baseline methodology *(specify title here):* >>

Energy Efficiency Improvement in Process and Manufacturing Industries

(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:

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The methodology defines total emission factors of specific energy consumed (kg CO2 / unit of product) for the baseline as well as for the project activity. Then, the delta of these emission factors is multiplied by the product output monitored during the project activity. The impact of the project activity on the energy efficiency is recorded just after the project activity execution. The future total emission factor is limited to this values to avoid accounting for future emission reductions that do not result from the project activity. All calculations are done on the plant level.

To define the emission factor for grid electricity, a "approximate operating margin" is used.

The additionality test formally proposed resembles the EB's additionaly tool but was considerably altered. It defines several exceptions, which can serve as loopholes.

No source of leakage is considered.

b) State the approach selected:

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§48 a) 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 approach selected is NOT the most appropriate. The methodology fails in giving convincing reasons for using approach §48 a). This approach is especially not suitable for industry sectors, in which energy costs are a considerable part of total production costs This is the case in the project underlying the proposed methodology (cement sector project). Hence, energy saving (and therefore CO2 reducing) measures or activities are often implemented under business-as-usual conditions. This points to the inappropriateness of the approach §48a), which is by definition backward looking or at least not future-oriented. For energy efficiency projects in energy intensive industries, a forward-looking approach should be adopted that is able to capture autonomous improvements in energy efficiency. Approach 48.b) or c) could be more suitable in this respect.

An illustrative example for trends in these sectors: The Vietnam Steel Corporation reduced its total specific electricity consumption per ton of steal from 2000 to 2004 by more than 20% (from 752 kWh/t to 600

kWh/t).[1] The measures implemented are all financially viable and were financed by the company without the CDM.

[1] Presentation by Vietnam Steel Corporation, Hanoi, 28 April 2005.

(2) Basis for determining the baseline scenario:

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

>>

Yes, the technical clarification to the proposed methodology defines five alternative scenarios in a first step, which are condensed to two in a second step. Then, the additionality test is used to select the most likely scenario.

However, future improvements in energy efficiency (other than for mandated measures) are not foreseen in the scenarios and need to be added.

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

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Sections D.6 and D.7 have to be corrected and completed (e.g. missing formula referred to for accounting for product mix changes) before a substantial review is possible.

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?

>>

An additionality test is proposed comprising four steps: (1) qualification test, (2) financial analysis, (3) barrier analysis and (4) common practice analysis.

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

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Baseline:

A static baseline setting using approach §48 a) is not acceptable for this project category.
Sections D.6 and D.7 have to be corrected and completed (e.g. missing formula referred to for accounting for product mix changes) before a more detailed review is possible.

Additionality:

Although the additionality test looks valid and similar to the EB's additionality tool at first glance, it is clearly not acceptable. It is too weak and provides too much room for unsubstantiated exceptions, including:

- An addition in test 1 makes passing all projects mandated by regulations, which are created for reducing GHG reductions: "...which is not created specifically for reducing GHG reductions after the signing of Kyoto Protocol";
- Test 3 and 4 both include an unsubstantiated exception for projects implemented by Energy Service Companies (barrier due to prevailing practice, p.6, and last paragraph of test 4 on p. 7). Hence, ALL projects undertaken by an energy service company can simply pass test 3 and 4.

As an illustration we can imagine a (even without CER revenues) highly profitable project activity facing no relevant barrier. Such a project activity would pass the proposed "additionality test" if it is financed by an energy service company.

(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 methodology is poorly documented. It apparently contains several serious mistakes, wrong references and inconsistencies. Examples include:

- p. 14: It seems that applying formula (6) and (7) by definition always results in either zero or negative emission reductions (ΔGE_t). When the total emission factor (TEF) in the baseline case is higher than in the project case (which can be assumed for CDM project), emission reductions always result being 0;
- p.13: To adjust for product mix changes the text refers to section E.1. We could not find any relevant further explications on this paramount issue. Whether in section E.1 nor in any other section of the proposed methodology;
- Section A.3 excludes projects that are mandated by law, while section D.3, test 1, defines exceptions for projects that are mandated by law. This is confusing and needs explication.

Furthermore, the methodology is often written in a unacceptably weak and/or unclear language using terms like ”would normally, include” (D.5) without giving further guidance regarding exceptional cases.

This methodology needs a careful and comprehensive redrafting. Especially sections D.6 and D.7 have to be corrected and completed (e.g. formula referred to for accounting for product mix changes) before a substantial review is possible.

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 methodology is not appropriate.

For energy efficiency projects in energy intensive industries a forward-looking approach should be adopted that is able to capture autonomous improvements in energy efficiency. A baseline, which remains constant over the whole crediting time is not acceptable in the current cement sector of India.

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:

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The static energy efficiency factor over the whole crediting period is unrealistic and not conservative.

(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):

>>

N.a.

Sections D.6 and D.7 have to be corrected and completed (e.g. missing formula referred to for accounting for product mix changes) before a review is possible.

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

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Manly plant specific data is used. This seems to be appropriate.

For defining the emission factor of the grid, "state, region or country data" shall be used. This is not appropriate. The geographical scope should not be the priority criteria when selecting electricity grid data. Much more important is the technical concept of the grid and interconnectivities. The selection of data should be primarily guided by these parameters, only secondarily by data availability.

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:

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In general, current vintage data is used. If not available (e.g. for electricity grid data) the latest available data shall be used. This seems to be appropriate.

It is not defined exactly which periodis used to measure "current" emissions. Is it the energy efficiency experienced during the last year before project implementation? This issue needs to be clarified explicitly.

(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

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- CO2 emissions from burning of fuel (excluding biomass)
- "CO2 emissions while generating power for the grid, which is consumed by the generating plant"

ii) Physical delineation

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"The project boundary would normally include" the manufacturing unit where the project is going to be implemented and the "electricity supply grid in the region".

b) Indicate whether this project boundary is appropriate:

>>

In general, it is appropriate.

However, (5) a) i) does not clearly specify whether CO2 emissions resulting from generating electricity, which is bought by the project proponent from the grid, is inside or outside the project boundary. This needs further clarification.

(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:

>>

N.a.

Sections D.6 and D.7 have to be corrected and completed (e.g. missing formula referred to for accounting

for product mix changes) before a review is possible.

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

>>

N.a.

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

>>

N.a.

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

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Data source indicated include*:*

- Company data;
- Electricity sector;
- IPCC defaults.

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

>>Date sources seem to be adequate.

f) State possible data gaps:

>>The current version is not specific enough regarding data to define grid electricity emission factors.

(7) Assessment of uncertainties:

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

i) The basis for determining the baseline scenario:

>>

The methodology mentions the uncertainty regarding adjustments for impacts of product-mix differences, but lacks more detailed assessed.

ii) Algorithms/formulae:

>>

No.

iii) Key assumptions:

>>

No.

iv) Data:

>>

No.

b) State whether the uncertainties presented are reasonable:

>>

Yes, they are reasonable. But other uncertainties are not presented (e.g. dynamic development of energy efficiency in the cement industry).

(8) Leakage:

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

>>Leakage is not accounted for.

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

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If fuel switches are excluded from the project activity as asked for in section A.3., then treatment of leakage seems to be appropriate.

(9) Transparency and "conservativeness":

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

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The methodology clearly lacks transparency due to the poor documentation (see also section B.I 3).

b) State whether the baseline methodology is conservative:

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In general, the baseline definition as well as the additionality test are not conservative. Especially the assumed constant energy efficiency during the whole crediting period is not conservative. However, there are a few details, which are defined in a conservative manner:

- Definition of specific carbon emission attributable to the project in period t (formula (5)). This excludes the effect of future improvements in efficiency not attributable to the project; and
- Definition of production level used for emission reduction calculations (parameter aQ_t, p. 14).

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

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Strengths:

In total, this methodology must be considered flawed. However, there are a few conservative looking elements such as:

- Sensitivity analysis in step 2 of the additionality test in section D.3;
- Definition of specific carbon emission attributable to the project in period t (formula (5)). This excludes the effect of future improvements in efficiency not attributable to the CDM project activity;
- Definition of production level used for emission reduction calculations (parameter aQ_t, p. 14).

Major weaknesses include:

- The methodology is poorly documented. It apparently contains several serious mistakes, wrong references and inconsistencies (for details see B.I.(3)).
- Although the additionality test looks valid and similar to the EB's additionality tool at first glance, it is clearly not acceptable. As an illustration we can imagine a (even without CER revenues) highly profitable project activity facing no relevant barrier. Such a project activity would pass the proposed "additionality test" if it is financed by an energy service company;
- The used approach §48(a) is not the most appropriate for this kind of project activity;

- It is neither conservative nor credible because it assumes a baseline with a constant total emission factor throughout the crediting period of the proposed project activity if no new mandatory regulations are introduced.

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

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Section D.4 states: "If there is a mandated energy efficiency norm or mandated use of process technology for the industry this can be accounted for by setting the baseline at..."

This weak language is inappropriate. It needs revision towards clear guidance.

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

>>

Applicability depends on how the current methodology is improved. Currently it is not applicable at all.

(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:

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Presentation by Vietnam Steel Corporation, Hanoi, 28 April 2005.

b) Indicate any further comments:

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II. Proposed new monitoring methodology *(specify title here):* >>

Energy Efficiency Improvement in Process and Manufacturing Industries

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:

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The methodology follows option 1 and monitors the emissions in the project scenario and the baseline scenario. Most key data regarding both, the project activity and the baseline is monitored at the plant level (e.g. quantity of product produced, electrical energy purchase, or fuel consumption for energy generation (thermal, captive electrical). Other data, such as emission factors of the grid or transmission and distribution losses, are taken from official statistics.

No parameter is monitored with regard to the product-mix of the plant.
No parameter is monitored with regard to leakage.

(2) Key assumptions/parameters:

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

>>

Same assumptions as for the baseline methodology.

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

>>

See B.I (6) above.

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

>>

See B.I (6) above.

(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):

>>

Same as in baseline methodology.

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

>>

See review of baseline methodology.

c) *State possible data gaps:*

>>

See review of baseline methodology.

(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. Like the baseline methodology, also the monitoring methodology is poorly documented (see section B.I (3) above). For example, formula (10) delivers always the value 0 when the total emission factor (TEF) in the baseline case is higher than in the project case (which can be assumed in a CDM project). The methodology needs corrections and a careful redrafting.

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):

>>

The proposed methodology is not appropriate.

For details see section B.I (3) above.

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

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Sections D.6 and D.7 have to be corrected and completed (e.g. missing formula referred to for accounting for product mix changes) before a review is possible.

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

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No leakage parameter is monitored.

If fuel switches are excluded from the project activity as asked for in section A.3., then treatment of leakage seems to be appropriate.

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

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No QA/QC control procedures are described. Instead of defining QA/QC control procedures uncertainty levels of data are described only. Furthermore, the methodology refers to an undiscoverable correction procedure for product mix changes in the baseline methodology.

Further elaboration is needed.

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

>>

Strengths:
None identified

Weaknesses:

- The methodology is poorly documented. It apparently contains several serious mistakes, wrong references and inconsistencies (for details see BI.(3)).
- Detailed data to calculate the “approximated operating margin” is not monitored. If there are no usable official emission factors for grid electricity available, it is paramount to monitor data that

allows for estimating "approximated operating margin".

- No parameter is monitored with regard to the product-mix of the plant.
- No QA/QC procedures are proposed.

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

>>

Applicability depends on how the current methodology is improved. Currently it is not applicable at all.

(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:

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b) Indicate any further comments:

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Signature of desk reviewer …… ……..

Date: 28 /04 /2005

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