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|  <p style="text-align: center;">CDM: Proposed new methodology expert form (version 04) (To be used by methodology experts providing desk review for a proposed new methodology)</p> | |
| Name of expert responsible for completing and submitting this form | Dian Phylipsen |
| Related F-CDM-NM document ID number | NM100 |
| <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 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.</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:>> Activities for the promotion of electricity efficiency, through the replacement of unitary equipment, by parties that are not the energy consumers.</p> | |
| <p>i. Conditions under which this methodology is applicable to other potential projects (e.g. project type, region, data availability):</p> <ul style="list-style-type: none"> • The methodology is intended for programmes that encourage the adoption of energy-efficient equipment such as lamps, ballasts, refrigerators, motors, fans, air conditioners, other appliances, etc. at many sites. • These technologies may replace existing equipment or be installed at new sites. • Applicable to programmes that promote the replacement of inefficient equipment in operation by high efficiency new equipment meeting the same end-use. In order to ensure that energy savings and emissions reductions are real, this methodology requires that the inefficient equipment be removed and disabled from further use. • The methodology would be applicable to the promotion of energy efficiency realized by organizations that are not the end users of energy. • The methodology is applicable to electricity efficiency, where the emissions reductions correspond to power plants supplying the grid connected to the electricity users where the energy efficiency measures would be applied. <p style="color: blue;">The methodology suggests that it can be used for equipment with fixed load as well as variable loads. The latter may however be very complicated in terms determine the baseline and of monitoring energy consumption after implementation. The document also does not describe the methodology for the latter case in any detail.</p> <p style="color: blue;">No geographical constraints</p> <p>ii. Strengths and weaknesses of the methodology:</p> <p>>> Strength: The methodology is straightforward insofar as it is based on estimates of energy consumption, power plant emissions factor and transmission and distribution losses. Moreover, the emissions factor for power plant emissions is determined by an approved consolidated methodology (ACM0002).</p> <p style="color: blue;">Weakness: no attention paid to difficulties of assessing load and operating hours of existing dispersed equipment in determining baseline. Probably not suited for equipment with variable load. Feedback effect (leakage) is not addressed.</p> <p>iii. Any changes needed to improve the methodology:</p> <p>a. Minor changes:>></p> | |

b. Major changes:>>

- delete applicability to variable load equipment
- describe how to determine number, load/capacity and operating hours for the dispersed set of equipment in baseline
- address feedback effect (leakage)

II. Evaluation of the proposed new monitoring methodology:

Title of new monitoring methodology: >> Activities for the promotion of electricity efficiency, through the replacement of unitary equipment, by parties that are not the energy consumers.

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

- >>The methodology is intended for programmes that encourage the adoption of energy-efficient equipment such as lamps, ballasts, refrigerators, motors, fans, air conditioners, other appliances, etc. at many sites.
- These technologies may replace existing equipment or be installed at new sites.
- Applicable to programmes that promote the replacement of inefficient equipment in operation by high efficiency new equipment meeting the same end-use. In order to ensure that energy savings and emissions reductions are real, this methodology requires that the inefficient equipment be removed and disabled from further use.
- The methodology would be applicable to the promotion of energy efficiency realized by organizations that are not the end users of energy.
- The methodology is applicable to electricity efficiency, where the emissions reductions correspond to power plants supplying the grid connected to the electricity users where the energy efficiency measures would be applied.

The methodology suggests that it can be used for equipment with fixed load as well as variable loads. The latter may however be very complicated in terms determine the baseline and of monitoring energy consumption after implementation. The document also does not describe the methodology for the latter case in any detail.

No geographical constraints

ii. Strengths and weaknesses of the methodology:

>> **Strength:** The methodology is straightforward insofar as it is based on estimates of energy consumption, power plant emissions factor and transmission and distribution losses. Moreover, the emissions factor for power plant emissions is determined by an approved consolidated methodology (ACM0002).

Weakness: no attention paid to difficulties of assessing load and operating hours of existing dispersed equipment in determining energy consumption and energy savings. Feedback effect (leakage) is not addressed. No guidance is given on what represents 'similar equipment', 'representative samples' and whether 'previous studies' are applicable. Too dependent on project sponsor's records for data.

iii. Any changes needed to improve the methodology:

a. Minor changes:>>

Major changes:>>

Provide guidance on:

- how to assess whether previous studies are applicable to the current project.
- how to determine what is 'similar' equipment
- what are 'representative samples'.

Address leakage.

Reduce dependency on project sponsor data

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

I. Proposed new baseline methodology (*specify title here*): >> Activities for the promotion of electricity efficiency, through the replacement of unitary equipment, by parties that are not the energy consumers.

(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 determines baseline energy use as the electricity consumption of the end-use equipment to be replaced, as determined by one of the standard procedures used in the end-use energy analysis and in evaluating energy efficiency programs, e.g. for equipment with fixed power input during operation, energy consumption is given by the product of the number of equipment of a given power input (kW) and the annual operating hours.

Energy (electricity) savings are converted to emission reductions using the approved consolidated baseline methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” and taking into account transmissions distribution losses.

Additionality is assessed using the Consolidated tool for the demonstration and assessment of additionality (published as Annex 1 to EB 16 Report, Dec. 2004).

b) State the approach selected:

>> 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 methodology states that the chosen approach is applicable as 'the project activity may involve different technologies and combinations of technologies so that no single technology can be used as a reference, as required in the second option' (i.e. approach b: Emissions from a technology that represents an economically attractive course of action, taking into account barriers to investment).

According to the document, approach c cannot be applied for the same reason, stating that '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.

This is however, a misinterpretation of the meaning of approach b. Approach b asks whether the more efficient equipment that replaces existing equipment in the project activity would not be implemented under the baseline scenario as representing an 'economically attractive course of action' in absence of the CDM project activity. I.e. what would have happened if the project would not be implemented, would the existing equipment have remained in place, without any improvements until 2012, which is what is suggested by the use of approach a. It has not been sufficiently substantiated that this is 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:

>> The documentation does describe different scenarios that should be included, but does not describe how the correct baseline scenario should be identified, other than that this should be done on a project by project basis by using the additionality tool.

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

>> ACM2 uses the combined margin approach to determine the emission factor of the avoided electricity production.

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 use of the Consolidated tool for the demonstration and assessment of additionality (published as Annex 1 to EB 16 Report, Dec. 2004).

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

>> As far as can be judged on this general level, yes. Depends on application of the selection of the baseline and the additionality tool in the individual cases.

(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, only approach for fixed load equipment is described, not for variable load, while Section B does suggest the methodology is also applicable to that type of equipment.

In general, the description does not pay any attention to the difficulties of determining the electricity consumption (or load and operating hours) of a large group of dispersed electrical equipment or which requirements this determination should meet.

The equation on the top of p7, using EP_k as the total amount of electricity purchased by users of the equipment definitely does not necessarily represent the same as the formula described further below on the same page, which determines the electricity consumption of each of the individual equipment, as the end-users can purchase electricity for a variety of other purposes as well.

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):

>> To the type of project yes, although some questions are raised by this specific PDD:

Unclear why the PDD uses AM005, rather than ACM002 (which incorporates, amongst others, AM005)

Continuation of existing motors till end of technical life is not substantiated

Not much corroboration that there are no alternatives to continuation of current equipment (baseline) and replacement by high efficiency motors in project activity.

The PDD misinterprets the EB16, annex 3 provision that policies promoting carbon extensive technologies since COP7 as can be excluded to mean that 'we could set the reference efficiency levels of old motors being replaced to values prior to the enactment of national standards in 1994' rather than only omitting the tightening of the Mexican NOM standards that occurred in 2002. However, the PDD does not use this provision.

Section on barriers (step 3 of additionality tool) is weak, basically stating that the fact that there are still inefficient motors being used proves that barriers exist. This would mean that each project improving the efficiency of existing plants or equipment would by definition be additional!

System boundary is different in PDD than in methodology description (excludes electricity grid)

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.

>> see above

Please explain:

>> see 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 algorithms can be used for programmes to implement different electrical end-use equipment

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

>> spatial scope of data should be consistent with the scope of the connected electricity grids. 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:

>> procedures for updating of emission factors for electricity from the grid are as described in AM002. This is appropriate.

Not clear how the differences in remaining life time of existing equipment is treated.

(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

>> emissions from power generations (no gases identified here, although Section E2 mentions CO₂ as well as methane and N₂O)

ii) Physical delineation

>> equipment consuming electricity that is replaced and the electricity grid they are connected to.

b) Indicate whether this project boundary is appropriate:

>> Yes

(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 only parameter/assumption explicitly mentioned is the grid emission factor, for which it is referred to ACM002.

Implicit assumptions include that the population of electrical equipment to be replaced can be treated similarly, independent of their size, efficiency, load, operating hours or that these can be determined for the entire population.

The methodology explicitly states that it is for programmes replacing electrical equipment by others than the end-users. It makes sense to have a separate methodology for this, as there are many issues with both baseline development and monitoring. However, the current methodology does not address those issues.

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

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

>> The only data sources mentioned are 'official national statistics' for CO₂ emission factors from fuels and the IPCC for emission factors of methane and N₂O from combustion (although the system boundary

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

>> for fuel emission factors yes, other data not.

f) State possible data gaps:

>> Information needed to estimate electricity savings (number of equipment, load, operation hours), sources for data to estimate the combined margin (other than fuel 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:

>> no

ii) Algorithms/formulae:

>> no

iii) Key assumptions:

>> no

iv) Data:

>> no

b) State whether the uncertainties presented are reasonable:

>> no, not presented

(8) Leakage:

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

>> No leakage is identified

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

>> will depend on type of equipment. In some cases, increased efficiency may lead to increased use (higher operation hours), e.g. leaving the lights on longer after installing CFLs because it costs less to leave them on, i.e. resulting in less emission reductions than forecasted..

(9) Transparency and “conservativeness”:

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

>> no

b) State whether the baseline methodology is conservative:

>> by not using provision of Eb16 to exclude recent policies: yes.

by not accounting for possible leakage: no

by not indicating how differences in load, operation hours etc are dealt with: unclear

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

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| <p>>> Strengths: Use of approved consolidated methodology and additionality tool; applicable to whole programmes of dispersed equipment rather than large stand alone projects, extending the scope of the CDM.</p> <p>Weakness: methodology does not address major issues associated with these type of projects where many small dispersed unit of equipment are replaced, related to data on number, load, operation hours, etc. Methodology also does not address 'feedback effect' or leakage.</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>>> The methodology chooses not to use the option set out in EB16, Annex 3, to exclude policies promoting less carbon intensive technologies implemented after adoption of the CDM M&Ps from the baseline to be conservative. This means that all national policies to promote energy efficiency in electrical end use equipment are included in the baseline.</p> |
| <p>(12) Applicability of the proposed methodology across project types and regions (please indicate):</p> <p>>> The methodology is intended for programmes that encourage the adoption of energy-efficient equipment such as lamps, ballasts, refrigerators, motors, fans, air conditioners, other appliances, etc. at many sites. These technologies may replace existing equipment or be installed at new sites.</p> <p>No geographical constraints</p> |
| <p>(13) Any other comments:</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>>> -</p> <p>b) Indicate any further comments:</p> <p>>> Although it is recommendable that methodologies are developed for programmes aiming to implement large numbers of small energy efficiency or renewable energy technologies, the current proposed methodology does not address the main problems associated with these type of projects, i.e. assessing the load factors and operational hours in the baseline situation, spotting leakage on so many different sites and dealing with the differences (in size, efficiency, life time, etc) within the population.</p> |
| <p>II. Proposed new monitoring methodology (specify title here): >> Activities for the promotion of electricity efficiency, through the replacement of unitary equipment, by parties that are not the energy consumers.</p> |
| <p><i>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:</i></p> |
| <p>(1) Brief description of new methodology:</p> <p>Describe new methodology:</p> <p>>> The document states that the methodology is based on ' monitoring data that permit a determination of the electricity consumption of the equipment affected by the energy efficiency measures before and after project implementation' and that is uses AM002 for the determination of the electricity grid emissions factor and parts of Appendix B 1 of the simplified modalities and procedures for small-scale CDM project activities (Version 30 June 2004) - II.C. Demand-side energy efficiency programmes for specific technologies</p> <p>No further explanation is given.</p> |
| <p>(2) Key assumptions/parameters:</p> <p>a) List the implicit and explicit key assumptions. Identify those, if any, which are problematic and explain:</p> <p>>> Very important implicit assumption is that the population of electrical equipment to be replaced can be</p> |

treated similarly, independent of their size, efficiency, load, operating hours or that these can be determined for the entire population.

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

(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):

>> Many data are based solely on records of the project sponsor, without a possibility for independent verification or cross-checks, or on 'previous studies' without guidance on whether these are applicable.

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

>> no.

c) State possible data gaps:

>> Guidance on:

- how to assess whether previous studies are applicable to the current project.
- how to determine what is 'similar' equipment
- what are 'representative samples'.

(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):

>> ?

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 have the same problem, of not addressing the main issue of how to determine # of equipment, load, operating hours.

The monitoring methodology does introduce new parameters in the formulas that are not included in the baseline methodology, related to climate zone j for equipment with a variable load. The latter type of equipment is not dealt with in the baseline methodology.

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

>> Not identified. Possible feedback effect (increased use, longer operating hours because of lower energy cost) is not addressed.

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

>> Remarks on QA focus on that either data are from project sponsor's own records, or that sample size should be chosen large enough.

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

>> **Strength:** The methodology is straightforward insofar as it is based on estimates of energy consumption, power plant emissions factor and transmission and distribution losses. Moreover, the emissions factor for power plant emissions is determined by an approved consolidated methodology (ACM0002).

Weakness: no attention paid to difficulties of assessing load and operating hours of existing dispersed equipment in determining energy consumption and energy savings. Feedback effect (leakage) is not addressed. No guidance is given on what represents 'similar equipment', 'representative samples' and whether 'previous studies' are applicable. Too dependent on project sponsor's records for data.

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

>> The methodology is intended for programmes that encourage the adoption of energy-efficient equipment such as lamps, ballasts, refrigerators, motors, fans, air conditioners, other appliances, etc. at many sites. These technologies may replace existing equipment or be installed at new sites.

No geographical constraints

(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:

>> -

b) Indicate any further comments:

>> Table B.2.1 states that for many of the data 100% of the data set will be monitored, i.e. all individual equipment will be monitored. Seems very unlikely. This is also contradicted by the comments, speaking of 'representative samples'

Signature of desk reviewer

Date: / /

Information to be completed by the secretariat

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| F-CDM-NMex doc id number | |
| Date when the form was received at UNFCCC secretariat | |
| Date of transmission to the Meth Panel and EB | |
| Date of posting in the UNFCCC CDM web site | |