

 <p style="text-align: center;">CDM: Proposed new methodology expert form (version 03) <i>(To be used by methodology experts providing desk review for a proposed new methodology)</i></p>	
Name of expert responsible for completing and submitting this form	Felicity C. Thomas
Related F-CDM-NM document ID number	NM 0072
<p><i>Note to those completing this form, as applicable: Please provide recommendations on the proposed new baseline and monitoring methodologies based on an assessment of annexes 3 and 4 and of their application in sections A to E of the draft CDM PDD, desk reviews and public input. Please ensure that the form is entirely filled and that arguments and expert judgements are substantiated.</i></p>	
A. Evaluation of the proposed new methodologies by desk reviewers:	
I. Evaluation of the proposed new baseline methodology:	
Title of new baseline methodology:>>Energy Efficiency Through Mandatory Appliance Standards	
<p>i. Conditions under which this methodology is applicable to other potential projects (e.g. project type, region, data availability):</p> <p>>>The methodology is applicable to all energy efficiency standards that meet the requirements of the CDM Executive Board approved additionality tool and where sufficient data exists about the technology population in a country.</p> <p>ii. Strengths and weaknesses of the methodology:</p> <p>>>Strengths - Provided the data is available the methodology is easy to apply and applicable across countries, regions and different technologies.</p> <p>Weaknesses -</p> <p>The methodology relies on data or scientific survey samples that can be expensive and difficult to collect.</p> <p>The method incorporates the CDM Executive Board approved ACM0002 method for calculating the operating margin emission factor, the build margin emission factor and the baseline emission factor however this method was developed for renewable energy sources and clarification of why the method is appropriate for non-renewable energy efficiency measures could be further elaborated. .</p> <p>The method does not clearly define what project emissions should be measured, although it is presumed that this will be the same as for the baseline.</p> <p>The method requires that the technologies are used for at least 50% of average operating hours. The 50% cut off point appears to be entirely random. Clarification of why this 50% cut off point was selected would increase transparency.</p> <p>The method does not account for leakage even though it is acknowledged that if more energy is used to produce or deliver a more efficient technology than a less-efficient model, there could be leakage. It is recommended therefore that the method is revised so as to accommodate this situation. i.e. if a new technology does require more energy than a less efficient model, this should be accounted for.</p> <p>It would be useful if the project boundary was presented schematically, to ensure that the project developer incorporated all emissions from the proposed technology, e.g. fugitive and process emissions.</p> <p>It is recommended that the number of samples is specified, e.g. a minimum of 3 samples for data collection in order to improve the accuracy and conservativeness of data collected. Justification for the number of samples specified should be provided.</p>	

- iii. Any changes needed to improve the methodology:
 - a. Minor changes:>>minor changes
 - b. Major changes: >>

II. Evaluation of the proposed new monitoring methodology:

Title of new monitoring methodology: >>Energy Efficiency Through Mandatory Appliance Standards

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

>>The methodology is applicable to all energy efficiency standards that meet the requirements of the CDM Executive Board approved additionality tool and where sufficient data exists about the technology population in a country.
- ii. Strengths and weaknesses of the methodology:

>>Strengths- Simple approach using proven quantification methods developed by the leading experts in Appliance standards.

Weaknesses

Quality assurance and control measures are not defined.

Relies on availability of data and/or scientific surveys that can be difficult and/or expensive to obtain. Both the baseline and the monitoring methodology may rely on statistical sampling as it may be impossible to monitor the performance of every appliance in the market.

Little precedence with approved methodologies- This is a relatively unique methodology that is not able to borrow heavily from already approved methodologies.

Long term activity- Developing a national level Appliance standard has traditionally required a tremendous investment of time and resources. Project developers will need to work jointly with key government, industry and NGO groups to move projects forward. The project may require extensive sampling surveys of both the efficiency levels of proposed appliances and the typical hours of use by consumers. The project would also likely require extensive long-term discussions with stakeholders and policy makers to determine what the standard should be.

The method does not account for leakage even though it is acknowledged that if more energy is used to produce or deliver a more efficient technology than a less-efficient model, there could be leakage. It is recommended therefore that the method is revised so as to accommodate this situation. i.e. if a new technology does require more energy than a less efficient model, this should be accounted for.
- iii. Any changes needed to improve the methodology:
 - a. Minor changes:>>minor changes
 - b. Major changes: >>

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

I. Proposed new baseline methodology (specify title here): >>Energy Efficiency Through Mandatory Appliance Standards

(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 baseline is determined by calculating the amount of energy which appliances would have consumed before an energy standard is introduced. Average measured performance data for the appliances is used and compared to the pre-standard average efficiency rating of the appliance. The method incorporates an annual energy efficiency improvement for the technology within the baseline. The baseline is then compared to the energy efficiency rate of the technology after the efficiency standard has been introduced.

b) State the approach selected:

>>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:

>>Since the method proposes the introduction of an energy efficiency standard that applies to more than one technology type, the comparison of different alternative technology options is not appropriate since what is required is an evaluation of different policy tools that could achieve the same improvement in energy efficiency. The approach of comparing the project (i.e. the introduction of the efficiency standard) to similar projects (i.e. similar policy measures implemented in other countries) might in some cases be appropriate where such information is available, but by using existing or historical emissions as the approach, the standard becomes more easy to apply. Therefore the approach selected is 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 method outlines how the baseline scenario is to be chosen and identified

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

>>Average emission factors and efficiency rates are used. However, it is accepted that over time, technologies improve and thus annual improvement is incorporated into the baseline method to ensure the conservativeness of the baseline over time.

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?

>>It must be proven that the proposed new energy efficiency standard would not be implemented without the revenues generated by the CERs. The tool used to prove this is the CDM Executive Board approved tool for proving additionality.

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

>>The basis for determining the baseline scenario is according to average data from random samples of a defined population of technology within the country or region. Provided the sampling is conservative this is an appropriate basis for determining the baseline scenario. The basis for determining additionality is appropriate and adequate.

(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 has been described adequately

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):

>>The proposed methodology is appropriate for the referred proposed project activity and the referred project context.

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.

>>The application of the methodology could result in a baseline scenario that reasonably represents the anthropogenic emissions by sources of greenhouse gases.

Please explain:

>>The method develops a baseline that describes an average level of efficiency of a technology or technologies before an energy standards is implemented. It does this using measured data, most commonly this data will be collected on the basis of sampling. The sampling follows existing good practice criteria for sampling, and thus the results are expected to be conservative and transparent.

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

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

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

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

>>The data used can be either national or regional level depending on the jurisdiction of the where the proposed new energy efficiency standard.

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:

>> At least three years of local data collected before the project starts (or the standard takes effect) should be available in order to calculate the historical annual improvement of the efficiency and the average retirement age of the appliance population during the project crediting period. If this data is not available, then a conservative estimate should be made based on the experiences of countries or regions that have implemented similar energy efficiency standards.

(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

>>The gases and sources generated by the technology and the fuel and energy supplies for the technology in question are incorporated within the project boundary.

ii) Physical delineation

>>The project boundary will include the definition of the appliance or the subset of a particular appliance that is covered by the mandatory appliance standard. While the project developer may be required to monitor and develop a Carbon Emissions Factor for the source of the CO₂ emissions avoided (usually the electricity grid for the affected geographic area), the energy sources will not be part of the project boundary since it is out of the control of the project developer.

b) Indicate whether this project boundary is appropriate:

>>It would be useful if the project boundary was presented schematically, to ensure that the project developer incorporated all emissions from the proposed technology, e.g. fugitive and process 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:

>>Assumes no significant emissions during the post energy efficiency standard phase. However should monitor newly produced technology to ensure that the energy efficiency standard is being met.

Assumes that no leakage will occur.

The method requires that the technologies are used for at least 50% of average operating hours. The 50% cut off point appears to be entirely random.

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

>>Most assumptions are derived in a transparent manner. More information regarding why 50% was selected as the cut off point for average operating hours of the technology would be useful. It appears to be a random cut off point.

The method incorporates the CDM Executive Board approved ACM0002 method for calculating the operating margin emission factor, the build margin emission factor and the baseline emission factor however this method was developed for renewable energy sources. Further justification of why the method is appropriate for non-renewable energy efficiency measures would increase transparency and understanding of the method.

The method does not clearly define what project emissions should be measured, although it is presumed that this will be the same as for the baseline.

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

>>In general the assumptions are adequate, however some additional information (see b above) would be useful for increasing transparency

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

>>-Electricity emissions factor (calculated from best available official statistics, scientific studies, etc.)

- Fuel emissions factor (from IPCC sources)

- Total annual population of new appliance (from official government and industry statistics and/or scientifically derived sampling data)

- New appliance sales data by equipment model and efficiency (from official government and industry statistics and/or scientifically derived sampling data)

- Average energy input of new appliance population- may require additional data to determine such as average size/capacity/output and efficiency rate per unit of output to determine (from official government and industry statistics and/or scientifically derived sampling data)

- Testing lab results for new equipment efficiency (from official government and industry statistics and/or scientifically derived sampling data)

- Average retirement age of equipment (from official government and industry statistics and/or scientifically derived sampling data)

- Mean user days (from official government and industry statistics and/or scientifically derived sampling data)

- Mean user hours per day (from official government and industry statistics and/or scientifically derived sampling data)

- Historical improvements in new appliance population efficiency (from official government and industry statistics and/or scientifically derived sampling data)

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

>>The data defined build on standard sampling practice, the information required within ACM0002, and the approved tool for additionality. The data requirements are adequate but further justification for using the methods in ACM0002 would increase transparency and consistency, since the methodology was developed for renewable energy projects and not energy efficiency projects. The quality of the data can of course vary according to different countries and therefore it is very important that sampling meets the standards described in the method.

f) State possible data gaps:

>>It is recommended that the number of samples is specified, e.g. a minimum of 3 samples for data collection in order to improve the accuracy and conservativeness of data collected and justification for the number of samples required should be provided.

(7) Assessment of uncertainties:

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

i) The basis for determining the baseline scenario:

>>The baseline does consider uncertainties in sampling techniques. However, requires that the DOE ensure that the results are conservative.

ii) Algorithms/formulae:

>>Standard sampling algorithms and algorithms and formulae already included within ACM0002.

iii) Key assumptions:

>>The methodology does not include an assessment of uncertainties regarding key assumptions.

iv) Data:

>>Uncertainty regarding the availability of data is addressed, and alternatives provided if data is missing.

b) State whether the uncertainties presented are reasonable:

>>An assessment of uncertainties surrounding key assumptions would be useful.

(8) Leakage:

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

>>It is presumed that there is no leakage from the project.

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

>>The method does not account for leakage even though it is acknowledged that if more energy is used to produce or deliver a more efficient technology than a less-efficient model, there could be leakage. It is recommended therefore that the method is revised so as to accommodate this situation. i.e. if a new technology does require more energy than a less efficient model, this should be accounted for.

(9) Transparency and “conservativeness”:

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

>>The baseline methodology has been developed in a transparent way.

b) State whether the baseline methodology is conservative:

>>The methodology incorporates techniques to ensure conservativeness (e.g. annual revision of the carbon emissions factor to account for real technology population and revisions to account for technology improvements over time), however its conservativeness in the method could be improved if the number of samples that can be used for the data is specified as a minimum of three samples, so as to ensure conservativeness and accuracy of the results.

Transparency would be improved if further justification was provided for the cut off point of 50% of average operating hours and additionally for why the methods within ACM0002 are applicable to energy efficiency projects.

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

>>Strengths - Provided the data is available, the methodology is easy to apply and applicable across countries, regions and different technologies.

Weaknesses -

The method relies on data or scientific sample survey that can be expensive or difficult to implement.

The method incorporates the CDM Executive Board approved ACM0002 method for calculating the operating margin emission factor, the build margin emission factor and the baseline emission factor however this method was developed for renewable energy sources and clarification of why the method is

<p>appropriate for non-renewable energy efficiency measures could be elaborated. .</p> <p>The method does not clearly define what project emissions should be measured, although it is presumed that this will be the same as for the baseline.</p> <p>The method requires that the technologies are used for at least 50% of average operating hours. The 50% cut off point appears to be entirely random. Clarification of why 50% is selected would be useful.</p> <p>The method does not account for leakage even though it is acknowledged that if more energy is used to produce or deliver a more efficient technology than a less-efficient model, there could be leakage. It is recommended therefore that the method is revised so as to accommodate this situation. i.e. if a new technology does require more energy than a less efficient model, this should be accounted for.</p> <p>It would be useful if the project boundary was presented schematically, to ensure that the project developer incorporated all emissions from the proposed technology, e.g. fugitive and process emissions.</p> <p>It is recommended that the number of samples is specified, e.g. a minimum of 3 samples for data collection in order to improve the accuracy and conservativeness of data collected.</p>
<p>(11) Other considerations, such as a description of how national and/or sectoral policies and circumstances have been taken into account (please explain):</p> <p>>>National and sectoral policies are taken into account through the implementaiton of the CDM Executive Board tool for additionality.</p>
<p>(12) Applicability of the proposed methodology across project types and regions (please indicate):</p> <p>>>The methodology is applicable to any country or region that wishes to implement an energy efficiency standard but has not been able to do so due to barriers to implementation. The method will be appropriate for any energy efficiency standard and is thus not project specific or region specific.</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>>>No additional source information has been used in undertaking this review.</p> <p>b) Indicate any further comments:</p> <p>>>No further comments</p>
<p>II. Proposed new monitoring methodology (specify title here): >>Energy Efficiency Through Mandatory Appliance Standards</p>
<p><i>In respect of the proposed new monitoring methodology, evaluate each section of annex 4 to the draft CDM PDD. Please provide your comments section by section:</i></p>
<p>(1) Brief description of new methodology:</p> <p><i>Describe new methodology:</i></p> <p>>>The methodology requires that the project developer monitor the baseline emissions and the project emissions on an annual basis.</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>>>Assumption that public open data is accurate and available, this is problematic (see c below)</p> <p>The methodology assumes that leakage is not relevant although an instance where leakage could occur is discussed. The methodology is recommended to incorporate a test for leakage that will accommodate these occasional instances where leakage is relevant.</p> <p>Technology improvements are expected to occur continuously over time. However in some cases this may not be the case, but this can be identified when the baseline or project emissions are monitored and thus this</p>

assumption is not a problem.

The requirement that the technologies should be used for at least 50% of the average operating time (in hours) appears to be random.

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

>>The assumptions are generally arrived at in a transparent manner with the exception of the selection of the 50% cut off point for technologies. i.e. the technologies need to be used for at least 50% of the average operating time (in hours).

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

>>The assumption that the publicly available data is accurate and reliable is not always adequate. It is therefore recommended that the project developer is always required to undertake a random sample of the population to assess the accuracy of the data and/or additional statistical tests of error are defined.

(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):

>>The project activity will be monitored using public data and/or sampling. The data will be derived from measurements and calculations.

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

>>All projects should be required to implement scientific sampling to ensure the accuracy of the public data used this will improve the accuracy of the data.

c) State possible data gaps:

>> All project developers are recommended to undertake sampling.

(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:

>>The methodology has been described in an adequate manner.

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):

>>The proposed methodology is appropriate for the project context with some minor changes.

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

>>Following some minor changes this monitoring methodology will be appropriate for use with the proposed baseline methodology.

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

>>The method does not account for leakage even though it is acknowledged that if more energy is used to produce or deliver a more efficient technology than a less-efficient model, there could be leakage. It is recommended therefore that the method is revised so as to accommodate this situation. i.e. if a new technology does require more energy than a less efficient model, this should be accounted for.

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

>>Quality assurance and control procedures are not defined on the assumption that the project developer can not exert any influence on the data that he uses. However, if the methodology required the project developer to undertake random sampling in accordance with the standards defined within the baseline method, it would be possible to assess the accurateness of the public data. Alternative statistical evidence that the data is correct could also be used and should be defined within the methodology.

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

>>Strengths- Simple approach using proven quantification methods developed by the leading experts in Appliance standards.

Weaknesses

Quality assurance and control measures are not defined.

Relies on availability of data and/or scientific surveys that can be difficult and/or expensive to obtain. Both the baseline and the monitoring methodology may rely on statistical sampling as it may be impossible to monitor the performance of every appliance in the market.

Little precedence with approved methodologies- This is a relatively unique methodology that is not able to borrow heavily from already approved methodologies.

Long term activity- Developing of a national level Appliance standard has traditionally required a tremendous investment of time and resources. Project developers will need to work jointly with key government, industry and NGO groups to move projects forward. The project may require extensive sampling surveys of both the efficiency levels of proposed appliances and the typical hours of use by consumers. The project would also likely require extensive long-term discussions with stakeholders and policy makers to determine what the standard should be.

The method does not account for leakage even though it is acknowledged that if more energy is used to produce or deliver a more efficient technology than a less-efficient model, there could be leakage. It is recommended therefore that the method is revised so as to accommodate this situation. i.e. if a new technology does require more energy than a less efficient model, this should be accounted for.

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

>>The proposed methodology is applicable for different technologies defined in the new standard. It is applicable to different regions and different project types.

(9) Any other comments:

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

>>No other source of information other than those available at the UNFCCC website has been used in evaluating this methodology.

b) Indicate any further comments:

>>No further comments

Signature of desk reviewer

Date: / /

Information to be completed by the secretariat

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	