

 <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	Steve Thorne
Related F-CDM-NM document ID number	NM0099
<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:	
Title of new baseline methodology:>> Energy Efficiency improvement in process and manufacturing industries	
<p>i. Conditions under which this methodology is applicable to other potential projects (e.g. project type, region, data availability):</p> <p>>> The method can be used in a wide range of applications including: manufacturing industries, chemical industries, mining and mineral production, and metal production wherever there is data available for the calculation of the emissions intensity and CV of the fuels being used which are affected by efficiency improvements in the plant.</p> <p>ii. Strengths and weaknesses of the methodology:</p> <p>>> The strength of the method is its wide application. Its weakness is that the additionality test is not sufficiently robust, there is not account taken of leakage, and the assessment of electricity emissions on the margin is not followed.</p> <p>iii. Any changes needed to improve the methodology:</p> <p>a. Minor changes:>> The final calculations included in D9 require further elaboration. The project boundary needs elaboration wrt gasses. The formatting and language needs to be improved.</p> <p>b. Major changes:>> Grid electricity estimations of emissions intensity should follow the method described in ACN0002. Similarly the tests of additionality should use the additionality tool stating which steps are not applicable where they are not.</p>	
II. Evaluation of the proposed new monitoring methodology:	
Title of new monitoring methodology: >>Energy Efficiency improvements in Process and Manufacturing Industries.	
<p>i. Conditions under which this methodology is applicable to other potential projects (e.g. project type, region, data availability):</p> <p>>> The method can be used in a wide range of applications including: manufacturing industries, chemical industries, mining and mineral production, and metal production wherever there is data available for the calculation of the emissions intensity and CV of the fuels being used which are affected by efficiency improvements in the plant. Track changes need to be removed.</p> <p>ii. Strengths and weaknesses of the methodology:</p> <p>>> The strengths are that the methodology can be applied to a wide range of interventions, and can aggregate these impacts, limits benefits to that obtained immediately after the project</p>	

implementation not including future capacity increases, and future efficiency improvements. The methodology applies to import or export of electricity to and from the grid and the generation of process heat within the plant either directly or through co-generation. The weakness may be that it will be difficult to measure the impacts of product-mix changes directly within the project boundary or outside as leakage.

- iii. Any changes needed to improve the methodology:
 - a. Minor changes:>> Reference is made to section E1 but this not attached - perhaps the referral needs to include "in the PDD" but then this conflicts with a stand-alone methodology. The note at the top of page 10, Section B.3. which states A = measured at the state of "validation" should surely read verification.
 - b. Major changes:>> Monitoring Calculations as per ACN0002 need to be included. The possibility for leakage must be included.

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:

>> The baseline scenario is defined by assessing past performance of the plant in terms of emissions which sets the baseline emissions. Emissions from the project activity are established just after the recommissioning of the plant with the project activity implemented and the plant operates at a higher efficiency. Any decline in the performance thereafter is penalised. No leakage is considered.

b) State the approach selected:

>> Existing or actual 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:

>> it is not appropriate as financial benefits of the energy efficiency improvement need to be considered in the assessment of the additionality of the project activity. The efficiency improvement provides savings which may make it part of the baseline.

(2) Basis for determining the baseline scenario:

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

>> it does not say this but rather introduces the existing scenario as the baseline scenario without undertaking the test of other scenarios.

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

>> incremental improvements in efficiency with the existing equipment as the baseline with stagnant or decreasing performance. For electricity baseline is based on the "approximate operating margin".

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?*

>> yes it does, but in a limited way using part of the additionality tool.

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

>> The IRR test should spell out generically what the "overall impacts of energy consumption, thermal energy consumption and throughput changes" are as a result of the energy efficiency improvements. Annexure 2 is referred to but is not included (perhaps this is reference to the PDD, but as the method is stand alone, this is not appropriate).

The common practice requirement of > 50% of applications without support from the CDM is too high. Other proposed methodologies have used figures as >5% and this would be fairer (see AM0014 Barrier5 analysis method). The specific example of the investment barrier for India of a 2 year or less payback needs to be confirmed with financing houses and not taken on face value that the preference is for productive capacity (by whom?).

(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 needs further elaboration.

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 methodology suits the proposed project where there appears to be clearer case for additionality though the PDD concedes that there are times when the sales increase can result in IRRs being high enough for the project activity not to be considered additional - in conservative assessments of IRRs this may show that there are times when the project activity is part of the baseline. Hence sales should be monitored to determine when the project is additional and when not.

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 methodology could result in the identification of the baseline.

Please explain:

>> The baseline could be identified in some instances, but the additionality of the proposed project may not be as clear cut without a more robust barrier analysis and clear-cut use of IRR/NPV/payback thresholds.

(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 description of the methodology includes generic formulae that can be used for other projects. The final calculations included in D9 require further elaboration.

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

>> There is no limit to the spatial scope. This is ideal.

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 data used is that which describes the current operations of the plant prior to the project activity, and then that which describes the project activity ex-post.

(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

>> it is not described in terms of gasses and sources.

ii) Physical delineation

>> The project boundary is described in terms of the plant/system boundary even if the activity is applied to a small part of it.

b) Indicate whether this project boundary is appropriate:

>> The physical project boundary is appropriate but excludes impacts of leakage beyond the system boundary. Emissions from electricity generation are described but not included within the boundary. More careful definition of the project boundary wrt gasses is required. The emissions consequences of changing product outputs as a result of the project activity and upstream emissions as a result of filling product gaps are not adequately explored.

(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 explicit assumption is that "approximated operating margin" should be used in the calculation of the grid emissions from electricity either imported to the plant or replaced as an exported of the plant. The explicit assumption proceeds to suggest that the emissions intensity and calorific value of the fuels can be obtained or calculated base on data from the fuel suppliers. Implicit assumptions are that the emissions intensity of the baseline and the project activity can be calculated using monitored data from the plant.

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

>> The explicit assumptions are explained but the choice of the methodology for the estimation of the electricity emissions is not derived transparently.

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

>> If there are changes in the production output of the plant - either more or less is produced - a method to deal with this is required.

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

>> Most of the data required which is not measured by the plant operations staff are from fuel suppliers who one hopes have the data that allows the baseline and project activity emissions to be calculated. Other data are required in the appraisal of additionality particularly data that provides a track record of investments in plant and their expected rate of return thresholds.

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

>> On site data with adequate QA/QC requirements should be adequate. CV and emissions factor data

should be available from suppliers and if not from the IPCC default values. This data should be adequate, consistent, accurate (and if not accurate at least conservative) and reliable. The investment thresholds for energy efficiency measures may be less objective.

f) State possible data gaps:

>> Possible gaps are in the upstream and downstream leakage associated with the project.

(7) Assessment of uncertainties:

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

i) The basis for determining the baseline scenario:

>> By and large energy efficiency measures are profitable without emissions reductions credits. The barriers are normally the problem and the uncertainty about whether the project will actually deliver the savings. The uncertainty will therefore be whether the data on the investment analysis and the barriers are sufficient to have stopped the project without income from the CERs. In other words there are uncertainties in the assessment of barriers that prove that the project activity is not part of the baseline. This assessment of this uncertainty is not explored.

ii) Algorithms/formulae:

>> Uncertainties are not explored.

iii) Key assumptions:

>> Uncertainties are not explored.

iv) Data:

>> The adjustment for the of product mix differences is the only uncertainty that is explored. The method for dealing with this uncertainty is to attempt to estimate the energy consumption for each product and compare the baseline and project emissions with each other on a quantity of product basis. The assessment of uncertainties is not applied to other data.

b) State whether the uncertainties presented are reasonable:

>> Uncertainties are not sufficiently explored.

(8) Leakage:

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

>> There is no method for dealing with leakage.

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

>> There may as a result of plant changes be a change in the products from the plant which may have to be managed elsewhere. There is also frequently take-back when considering energy efficiency improvements. Transport changes are likely to decrease the quantity of fuel consumed and could be ignored as "negative" leakage, but if the shift in the fuel were in favour of a fuel that was transported by road or rail replacing a piped liquid or gaseous fuel, leakage may well be positive. For such a generic methodology it is essential that such possibilities are included in the methodology.

(9) Transparency and "conservativeness":

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

>> The baseline is developed transparent but not conservatively.

b) State whether the baseline methodology is conservative:

>> The baseline cannot be considered conservative while the additionality tests are not adequately applied as there is need to demonstrate more robustly that the project idea is not part of the baseline. There are moments where conservative assumptions are taken and they include that all CH₄ and N₂O gasses are ignored and "negative" leakage is ignored. This is conservative in most instances but may not be in all - a test needs to be conducted to conclude that the leakage is negative before it can be ignored.

<p>(10) Potential strengths and weaknesses of the proposed baseline methodology (please explain):</p> <p>>> The strength of the method is that it is generic with a wide range of applications. Its weakness is that it does not adequately present the additionality test and use of the consolidated electricity margin approach.</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 policies are taken into account in the assessment of additionality. The implications of regulatory issues wrt emissions and equipment standards are considered.</p>
<p>(12) Applicability of the proposed methodology across project types and regions (please indicate):</p> <p>>>The applicability is spatially broad where data exists that allows for the calculation of CVs and emissions intensities of the various fuels and electricity that are used in plants undergoing efficiency improvements.</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 other source of information has been used in the 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 improvements in Process and Manufacturing Industries</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><i>Describe new methodology:</i></p> <p>>> The methodology monitors plant level aggregates such as quantity of products produced, electrical energy purchased, fuel consumption for energy generation (thermal and electrical), emissions factor for grid, transmission and distribution losses for the grid and so on.</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>>> A key implicit assumption is that all the data required to calculate the baseline, project activity and leakage can be gathered by the project participant. Explicit assumptions are that there is no leakage, that for the pre and post project implementation mix, the product mix remains the same, that the most recent grid and transmission and distribution losses are used, the energy consumption for production is variable, and the effect of fuel mix changes on emissions, transport changes, effect on emissions of fuel mining/production and the CH₄ and N₂O emissions can be ignored.</p> <p>b) State whether the key assumptions are arrived at in a transparent manner:</p> <p>>> The leakage issue is presented transparently. The other assumptions are listed but not arrived at or developed transparently.</p> <p>c) Give your expert judgement on whether the assumptions/parameters are adequate:</p> <p>>> The assumptions are adequate, but should include the possibility for a monitoring of leakage. In most cases of improved energy efficiency, however, leakage will be negative and therefore its exclusion will make sense on the grounds of conservatism. The key therefore should be to test whether the leakage is positive or negative - if negative it can be ignored. The assumption that the products may be the same in the project activity as in the baseline is perhaps tenuous. The approach allows for changes to be taken into</p>

account in the estimation of emissions ex-post.

(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):

>> Data sources outside of normal plant operations may be difficult to obtain in some instances and its use may not be adequate where the data vintage is contested as being out of date.

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

>> On-site data can be supplied adequately, consistently, accurately and reliably where QA/QC is frequently applied.

c) State possible data gaps:

>> Data describing leakage.

(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 is adequately described.

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 method with the leakage exception is appropriate.

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

>> It is compatible.

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

>> omitted on the grounds of conservatism.

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

>> The measures are predominantly applied internally to plants' operation

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

>> The strengths are that the methodology can be applied to a wide range of interventions, and can aggregate these impacts, limits benefits to that obtained immediately after the project implementation not including future capacity increases, and future efficiency improvements. The methodology applies to import or export of electricity to and from the grid and the generation of process heat within the plant either directly or through co-generation. The weakness may be that it will be difficult to measure the impacts of product-mix changes directly within the project boundary or outside as leakage.

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

>> The method can be used in a wide range of applications including: manufacturing industries, chemical industries, mining and mineral production, and metal production wherever there is data available for the calculation of the emissions intensity and CV of the fuels being used which are affected by efficiency improvements in the plant.

(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 data was used.

b) Indicate any further comments:

>> [no further comments.](#)

Signature of desk reviewer

Date: 28 / 4 / 2005

Information to be completed by the secretariat	
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