

 <p style="text-align: center;">CDM: Proposed New Methodology Meth Panel recommendation to the Executive Board (version 04) <i>(To be used by the Meth Panel to make a recommendation to the Board regarding a proposed new methodology)</i></p>	
Date of Meth Panel meeting:	4 - 8 April 2005
Related F-CDM-NM document ID number (electronically available to EB members)	F-CDM-NM0089: “Coromandel Electric Company Ltd. (CECL) Natural Gas based Engine Fired Captive Power Plant in Tamilnadu, India”
Related F-CDM-NMex document ID number(s) (electronically available to EB members)	F-CDM-NMex0089: Puhl / Esparta
Related F-CDM-NMpu document ID number(s) (electronically available to EB members)	F-CDM-NMpu0089: Harthan
<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. Final recommendations by the Meth Panel	
I. Recommendation on the proposed new baseline methodology: (checkmark the choice made)	
Title of proposed new baseline methodology:>> Methodology for power generation for captive use, which is grid connected, using non-renewable and less GHG intensive fuels.	
a. To approve this proposed methodology with minor changes <input type="checkbox"/> <div style="margin-left: 40px;"> i. Conditions under which this proposed methodology is applicable to other potential CDM project activities (e.g. project type, region, data availability): >> ii. Minor changes: >> </div>	
b. To reconsider this proposed methodology, subject to required changes <input type="checkbox"/> <div style="margin-left: 40px;"> i. Conditions under which the proposed methodology is applicable to other potential projects (e.g. project type, region, data availability): >> ii. Required changes: >> </div> <p><i>(Project participants shall make required changes to the proposed new methodology and send it back to the Meth Panel. The proposed new methodology will be reconsidered by the Meth Panel if changes required are made by the project participants. The Executive Board will only consider this proposed new methodology after the revised proposed methodology has been reconsidered by the Meth Panel.)</i></p>	

c. Not to approve the proposed methodology



i. Reasons for non-approval:

>> In general, the methodology is not stand-alone, general, applicability conditions are not relevant, practically all the sections are to be re-drafted or significantly improved:

- 1) Although the methodology stipulates a broader applicability to fuels it seems that its applicability is rather limited to natural gas/proposed project activity described in the draft CDM-PDD. The methodology should be stand-alone and not refer to specific projects, not project specific.
- 2) The methodology does not include any guidance how to choose between the alternatives, in particular it does not clearly justify what is the most likely baseline scenario.
- 3) The methodology makes reference to the “Tool for the demonstration and assessment of additionality” but uses an adapted version. Some steps are to be improved. E.g. The proposed barrier analysis seems weak because any barrier is enough for passing of this step (wrong conclusion). Justification would be needed on why in the absence of the CDM project activity, the user Industry would have continued to meet its power demand through the grid.
- 4) Merit order analysis: Two options are mentioned however the methodology does not clarify which one is to be chosen/how are the options to be chosen. It is not clear whether the “generation-weighted average emissions per electricity unit of all generating sources serving the system” or the “merit order data analysis” is used for calculating operating margin emission factor. It is said in D.6 that the average operating margin (OM) emission factor (EOM, average, Y) is calculated as the generation-weighted average emissions per electricity unit of all generating sources serving the system, including low-operating cost and must-run power plants. However, further OM is determined on the basis of merit order data analysis.
- 5) Leakage is addressed incorrectly. Since the project emissions are calculated on the basis of power plant data i.e. before the transmission through the grid they already include emissions related to the transmission losses. Therefore, no leakage occurs. Change all relevant sections accordingly. By the way, baseline accounts for emissions related to net power (power received by the user industry after transmission through the local grid) and not the power lost during transmission. In this sense the methodology is conservative.
- 6) In section B: (a) cleaner and non-renewable fuels do not have near zero CO₂ emissions; (b) Alternative II is project specific (locating the power plant at coal mine pit head);
- 7) Formula (8) for baseline emissions is correct if generated power is supplied only to the user industry, but if it is also exported to the grid baseline emissions would be underestimated. Besides emission factor should be $EF_{CM, Y}$ instead of E_{CM}
- 8) Project emissions must be calculated every year. Therefore, in formulae (9)-(11) sub-index y (year y) must be presented.
- 9) Explain why emissions during transportation of power generation fuel are calculated only for natural gas - formula (10).
- 10) In Table of section E.2 annual fuel consumption at proposed power plant and gross calorific value of fuel are listed among the key parameters. However, they are not included in any calculations.

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

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

Title of proposed new monitoring methodology: >> [Methodology for power generation for captive use, which is grid connected, using non-renewable and less GHG intensive fuels](#)

a. To approve this proposed methodology with minor changes

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

>>

ii. Minor changes:

>>

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

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

>>

ii. Required changes:

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(Project participants shall make required changes in the proposed new methodology and send it back to the Meth Panel. The proposed new methodology will be reconsidered by the Meth Panel if changes required are correctly made by the project participants. The Executive Board will only consider this proposed new methodology after required changes proposed have been made and the revised proposed methodology has been reconsidered by the Meth Panel.)

c. Not to approve the proposed methodology

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i. Reasons for non-approval:

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- 1) The meaning of HR_f is unclear – how it is calculated. If it uses fuel consumption data, why aren't they monitored? (section B.2.1)
- 2) Project emissions must be calculated every year.
- 3) Not consistency between CDM-NMM and CDM-NMB For example, in CDM-NMM AG: Electricity dispatch to the grid by power generating units in the operating margin is used (B.2.3) and in the CDM-NMB - Actual Power Generation"; IC_OM: Installed capacity of the above power plants (see CDM-NMM: section B.2.3). In the CDM-NMB "Design Capacity" is used.
- 4) Leakage is addressed incorrectly
- 5) Explanation is needed why the analogous plant(s) to be considered for emission calculation (in OM) should not be <10 years older than the given plant(s) in the building margin (BM) (p. 12).

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

B. Details of the evaluation of the proposed new methodology by the Meth Panel:**I. Proposed new baseline methodology (*specify title here*):** >> Methodology for power generation for captive use, which is grid connected, using non-renewable and less GHG intensive fuels**(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 includes the following steps:

- Establish additionality of the proposed activity
- Determine the relevant electricity grid
- Determine the baseline emission factor as a combined margin consisting of the average combination of operating and build margins. The set of plants in the operating margin are selected based on the performance ratio
- Baseline emissions are calculated ex-ante and monitored annually ex-post

b) State the approach selected:

>> The proposed approach is as per paragraph 48 (a) of the CDM modalities and procedures: "Existing actual or historical emissions, as applicable".

c) Indicate (in summary form) why the approach selected is the most appropriate. Please provide your expert judgement on the appropriateness of the selected approach to the project category:

>> The approach chosen is the most appropriate because the vintage data from the past two to three years are used for the operating and build margin emission factors calculations.

(2) Basis for determining the baseline scenario:*a) State whether the documentation explains how the baseline scenario is to be chosen and identified:*

>> Not clearly. In section D.1 just three possible alternatives are listed but there is no guidance how the baseline scenario is to be chosen. Only after reading the whole methodology it can be understood that in the baseline scenario electricity produced by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.

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

>> The basic rationale is that baseline emissions are calculated using combination of operating margin and build margin. Performance Ratios = Actual Power Generation / (Design Capacity* Plant Load Factor) for all plants in the operating margin are analyzed and then ranked in order to select the worst performers (merit order analysis) who contribute about 10% of the total power generated in the grid.

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. The methodology provides the additionality test based on the "Tool for demonstration and assessment of additionality". However, the additionality test has to be improved (see required changes).

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

>> Basis for assessing additionality in general is appropriate and adequate; for determining the baseline further clarification is needed.

(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 (see above).

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 may be appropriate if all required changes in item A.I.b.ii are properly addressed.

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 (see above).

Please explain:

>> Section D.6 stipulates that the average OM emission factor (EOM,average,Y) is calculated as the generation-weighted average emissions per electricity unit of all generating sources serving the system, including low-operating cost and must-run power plants. However, neither EOM,average,y is used elsewhere nor what is meant with “the system” is defined (only “lowest level of the grid” on p. 3 or “grid/third party where the project proponent has a full control” are mentioned, without further clarification); further OM is determined on the basis of merit order data analysis.

(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):*

>> Algorithms and generic formulae for estimation of baseline emissions can be applied to other project activities, but for estimation of project emissions are mostly project-specific, especially for emissions during transportation of power generating fuel

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

>> No. Local, state, regional and national spatial levels of data are not properly/thoroughly explained/defined. Also, there is a critical dependence on subjective data (“design capacity” in contrast to objective available installed capacity) as well as unclear indirect calculations, for example, project emissions are calculated through “plant load factor” while it would be much more straightforward to be directly calculated using fuel used and energy generated.

c) *Explain the vintage of data used (in relation to the duration of the project crediting period) and whether the vintage of data is appropriate, indicating the period covered by the data:*

>> The vintage of data for set of operating power plants, their generation capacity, dispatch, fuels etc., is maximum of three years.

The power plants included into the built margin would have to be determined from two-year-old data.

(5) Definition of the project boundary related to the baseline methodology:

a) State how the project boundary is defined in terms of:

i) *Gases and sources*

>> In section D.5 methodology defines project boundary as CO₂ emissions of existing and planned power generation facilities. However, project emissions during transportation of power generation fuel are calculated using P_{EF} (t CH₄/km), i.e. CH₄ should be in project boundary as well.

ii) *Physical delineation*

>> The project boundary is from the point of fuel supply to the point of power generation to export to the grid/ third party, where the project proponent has a full control. Therefore, the project boundary will cover the following items:

- Storage and transportation (by the project proponent) of fuel,
- Power generation facility,
- Dispatch to the grid, and
- Captive consumption (within the power generation plant) units.

b) Indicate whether this project boundary is appropriate:

>> No. CH₄ is not included into the project boundary and “Dispatch to the grid” demands a more detailed definition

(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:

>> Implicit assumptions:

- Plants under construction will operate as forecasted (problematic if there is no historic evidence or monitoring/verification);
- The variable “performance ratio” is a reasonable one to demonstrate the dispatch merit (problematic as the value is subjective);
- The project activity will only use natural gas as fuel (problematic if there is no direct monitoring/verification);
- The variable “plant load factor” is a reasonable one to derive the power generation of the plants under consideration (problematic, directly fuel consumption and power generation monitoring would be more appropriate);
- “IPCC factors” are enough to calculate CO₂ contributed by all the plants (Problematic. Individual fuel consumption and thermodynamic efficiency will be necessary);
- The electricity produced by the project activity (NETPOWER = generated power - transmission losses) will be supplied exclusively to the user industry from the CDM project. If project activity produces more power than necessary for captive use, most likely it would be exported to the grid.

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):

>> Data sources are generically presented (“published at any public domain by any level of government authority and is verifiable”).

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

reliable:

>> Unclear, therefore no.

f) State possible data gaps:

>> Data on fuel consumption and/or thermodynamic efficiency of individual power plants;
Data on power generation by the project activity.

(7) Assessment of uncertainties:

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

i) The basis for determining the baseline scenario:

>> No systematic assessment of uncertainties is included.

ii) Algorithms/formulae:

>> No systematic assessment of algorithms/formulae uncertainties is included.

iii) Key assumptions:

>> No systematic assessment of key assumptions uncertainties is included.

iv) Data:

>> No systematic assessment of data uncertainties is included.

b) State whether the uncertainties presented are reasonable:

>> No. Simply mentioning uncertainties without addressing them is not enough.

(8) Leakage:

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

>> Yes. According to the methodology emissions related to the transmission losses if they are significantly different for the sections of the grid should be accounted for a leakage.

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

>> No. Since the project emissions are calculated on the basis of power plant data i.e. before the transmission through the grid they already include emissions related to the transmission losses. Therefore, no leakage occurs

(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:

>> Unclear without explicit data on fuel consumption and/or thermodynamic efficiency (or best available technology) for individual plants.

Emissions related to the transmission losses in the baseline scenario are not accounted for baseline emissions that makes the methodology in this sense conservative

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

>> Strengths:

- Wide applicability;
- Simplicity of the intuitive approach

Weaknesses:

<ul style="list-style-type: none"> • Lack of overall clarity in the documentation • Key dependence on subjective data (“performance ratio”) • High dependence on indirect calculation/estimation • Energy imports to the relevant grid are not taken into consideration • Problematic assumptions • Incorrect accounting for leakage
<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 consideration of national and/or sectoral policies and circumstances is not adequately addressed by the methodology. The aspects mentioned only refer to possible <i>restrictions</i>. However, most importantly, policies and measures which foster certain technologies or fuels (e.g. renewables policy, policy to foster cogeneration etc.) should be considered. In contrast, in this methodology, this is explicitly excluded (“the policy articulations preferring one fuel over the other, one technology over the other, is not accounted for in the operating and combined margin determination”). This is clearly not adequate and should therefore be addressed appropriately</p>
<p>(12) Applicability of the proposed methodology across project types and regions (please indicate):</p> <p>>> The concept of the methodology may be applicable to any natural gas fired power plant addition (more widely if the assumption of only using natural gas is substituted by any fuel as long as monitored) providing geographic and system boundaries for the relevant electricity grid can be clearly identified and information on the characteristics of the grid is available</p> <p>Region is unconstrained.</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>>> None.</p> <p>b) Indicate any further comments:</p> <p>>> No further comments.</p>
<p>II. Proposed new monitoring methodology (specify title here): >> Methodology for power generation for captive use, which is grid connected, using non-renewable and less GHG intensive fuels</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>>> According to the proposed monitoring methodology, it is intended to screen the parameters related to:</p> <ul style="list-style-type: none"> • Operating and build margin plants in the grid to which the captive plant will be connected, for estimating the baseline emissions; • Annual process parameters which can be used to calculate the process emissions.

(2) Key assumptions/parameters:

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

>> Implicit assumptions:

- Plants under construction will operate as forecasted (problematic if there is no historic evidence or monitoring/verification);
- The variable “performance ratio” is a reasonable one to demonstrate the dispatch merit (problematic as the value is subjective);
- The project activity will only use natural gas as fuel (problematic if there is no direct monitoring/verification);
- The variable “plant load factor” is a reasonable one to derive the power generation of the plants under consideration (problematic, directly fuel consumption and power generation monitoring would be more appropriate);
- “IPCC factors” are enough to calculate CO₂ contributed by all the plants (problematic. Individual fuel consumption and thermodynamic efficiency will be necessary);
- The electricity produced by the project activity (NETPOWER = generated power - transmission losses) will be supplied exclusively to the user industry from the CDM project. If project activity produces more power than necessary for captive use, most likely it would be exported to the grid.

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):

>> Data sources are generically presented (“published at any public domain by any level of government authority and is verifiable”).

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

>> Unclear, therefore no.

c) State possible data gaps:

>> Data on fuel consumption and/or thermodynamic efficiency of individual power plants;

Data on power generation by the project activity.

(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):

>> No without clarification and filling the data gaps.

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

>> No without clarification and filling the data gaps. For example (i) AG: Electricity dispatch to the grid by power generating units in the operating margin in baseline methodology is called as “Actual Power

Generation”; (ii) IC_OM: Installed capacity of the above power plants in baseline methodology is called as “Design Capacity”, etc.
<p>(5) Leakage <i>(please elaborate, if appropriate):</i></p> <p>>> No monitoring for leakage is considered as no associate leakage is assumed (see above).</p>
<p>(6) Quality assurance and control procedures <i>(please explain):</i></p> <p>>> Only generic QA/QC control procedures are mentioned (“protocols of the project proponent”). As many variables are indirectly estimated/calculated thoroughly procedures are highly recommended.</p>
<p>(7) Potential strengths and weaknesses of the proposed monitoring methodology <i>(please explain):</i></p> <p>>> <u>Strengths:</u></p> <ul style="list-style-type: none"> • Wide applicability; • Simplicity. <p><u>Weaknesses:</u></p> <ul style="list-style-type: none"> • Lack of overall clarity; • High level of indirect monitoring (the great majority of the data is either calculated or estimated). • Some of the monitored data have no indication on how they will be acquired (measured, calculated or estimated?); • Unclear assumptions while calculating and/or estimating the monitoring data; • Energy exports to the grid are ignored; • Data sources are not clearly specified.
<p>(8) Applicability of the proposed methodology across project types and regions <i>(please indicate):</i></p> <p>>> The proposed monitoring methodology might be applicable (with required clarifications and all the gaps filled) to any natural gas fired power plant addition providing geographic and system boundaries for the relevant electricity grid can be clearly identified and information on the characteristics of the grid is available.</p> <p>Region is unconstrained.</p>
<p>(9) Any other comments:</p> <p><i>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:</i></p> <p>>> None.</p> <p><i>b) Indicate any further comments:</i></p> <p>>> No further comments.</p>



Signature of Meth Panel Chair

Date: 15/04/2005 (Jean-Jacques Becker)

Signature of Meth Panel Vice-Chair

Date: 15/04/2005 (José Miguez)

Information to be completed by the secretariat

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