CDM: Proposed New Methodology
Meth Panel recommendation to the Executive Board
(version 04)
(To be used by the Meth Panel to make a recommendation to the Board regarding a proposed new methodology)

Date of Meth Panel meeting:	4 - 8 April 2005
Related F-CDM-NM document ID number (electronically available to EB members)	F-CDM-NM0084: "Natural Gas-Fired Cogeneration Plant Replacing Oil-Fired Boilers"
Related F-CDM-NMex document ID number(s) (electronically available to EB members)	F-CDM-Nmex0084: Hisatome / Schiller
Related F-CDM-NMpu document ID number(s) (electronically available to EB members)	F-CDM-NMpu0084: Harthan

Note to those completing this form, as applicable: Please provide recommendations on the proposed new baseline and monitoring methodologies based on an assessment of CDM-NMB and CDM-NMM and of their application in sections A to E of the draft CDM-PDD, desk reviews and public input. Please ensure that the form is entirely filled and that arguments and expert judgements are substantiated.

A. Final recommendations by the Meth Panel

I. Recommendation on the proposed new baseline methodology: *(checkmark the choice made)*

Title of proposed new baseline methodology:>> Baseline methodology for Natural Gas-Fired Cogeneration Plant Replacing Oil-Fired Boilers.

a. To approve this proposed methodology with minor changes

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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:

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b. To reconsider this proposed methodology, subject 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 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.)

c. Not to approve the proposed methodology

☒

i. Reasons for non-approval:

>> The methodology is not acceptable as it is not a standalone methodology, applicable to other projects. It provides many project-specific arguments that may not applicable to other projects. A number of changes are required to provide an accurate and transparent estimate of emission reductions.

Additionality

1) The financial analysis which is the main basis of proving project additionality is inadequately documented and may actually indicate the opposite of the additionality argument made. More thorough documentation and sensitivity analyses providing a more robust financial argument should be defined. In the financial analysis no scrap value for the oil-fired boilers indicates that oil-fired boilers continue to be used by the plant (which raises the question of leakage). Including a scrap value could change the result. Also no variable costs are included for oil boilers.

Baseline

2) The methodology should provide a more general approach for the determination of what may be the baseline and which alternatives exist to the project activity.
3) The CO_2 calculated for the project and for the baseline case is to be divided by the quantity of corn processed in order to create a metric that allows for the adjustment of emission reductions in case of fluctuation of the business cycle (corn processing). This is a valid approach. However, an adequate metric must be selected. The sensitivity of the metric with variability in corn production must be evaluated. A good metric should be reasonably constant with varying production over time (so ideally, t CO_2/t processed corn should be constant (or the variation should be small)). Other related issues are: (i) why is an average of two years taken, and why not the lower value (to be conservative); (ii) the methodology does not account for changes in production process, for example, a more efficient production technology that reduces energy per tonne of corn processed would also generate ERs that can not be attributed to the fuel switch in boilers or the source of electricity; (iii) any new capacity addition would also benefit for emission reductions, which could be a result of higher capacity of the new gas cogen boiler or otherwise.
4) The developers use build margin for the calculation of the electricity baseline, which could be adequate in the Brazilian context. However, a methodology should provide a broader and more general approach to determine the baseline (build margin, operating margin, combined margin) and provide a justification for the selected option. Using the build margin, the shares of technologies (in this case natural gas combined cycle versus simple cycle) expected to be built should be demonstrated. This should be the basis for the calculation of the emission factor for electricity production. (Project specific comment, though it is part of the methodology - the efficiency of 40% is very low for a primarily CCGT system, which is relatively new).
5) The formulae provided for baseline calculation and project emissions are project-specific. The methodology should provide formulae that are applicable to different types of projects and different options for baselines. The use of natural gas as fuel source for baseline displaced grid electricity may be justified for a specific case but a general approach should be specified.
6) Electricity purchased from the grid in the event of shutdown, maintenance, etc. of the cogeneration system is not considered in the analyses.
7) Possible use of fuel oil and/or natural gas in the backup boilers are not considered in this methodology.
8) Emissions other than CO_2 are not considered, and although probably resulting in conservative estimates for this project, do not result in this being a generic methodology.
9) The description of the methodology is not sufficient (particularly in terms of operating modes and cogeneration equipment utilized) to determine whether the methodology for emissions monitoring and baselines is appropriate.
10) Separation of fuel use for steam and electricity production is not possible with a cogeneration

configuration. Either aggregated energy input for heat and electricity should be considered, or the way to separate energy inputs should be defined.

11) The baseline and project emission factors and electricity production efficiencies were inadequately documented. The formulae for calculating baseline CO_2 emissions are inadequate as the gas required for electricity is calculated using a generic gas turbine efficiency.

Leakage

12) There is no reference to the existing boilers and the project specific information provided indicates that a new boiler was purchased in 2004 after the project activity was implemented in 2003.

13) As the grid electricity displaced is marginal (and will most likely be used elsewhere), there will be additional leakage from gas pipelines extended to supply natural gas to the project facility.

(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: >> Natural Gas-Fired Cogeneration Plant Replacing Oil-Fired Boilers.

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:

>>

(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

☒

i. Reasons for non-approval:

>> The proposed methodology is inadequate for the following reasons:

1) Natural gas consumption for electricity production and thermal energy produced by a gas turbine cogeneration system cannot be differentiated, so it is not clear what is being monitored

2) The methodology does not include fuel oil and natural gas that could be utilized by the auxiliary boilers or fuel oil for supplemental firing of the Heat Recovery System (not indicated if this capability exists)

3) The monitoring methodology would benefit from a description of the rudimentary heat balance indicating all fuel inputs and thermal and electricity outputs. A project heat balance and better description of installed systems and how they are operated is required with monitoring - in its present form the monitoring methodology is a repetition of the baseline methodology's equations.
4) Page 5 Variable 8 it is unclear how the emission factor for grid electricity is estimated in "Btu/kWh" units.
5) The methodology does not specify how electricity sales to the grid are included in the emission reductions calculations as these are not mentioned in the formulae, and how are these affected by corn production.
6) Steam measured in tonnes alone is not sufficient; other characteristics like pressure and temperature should be specified.

The treatment for leakages and monitoring related parameters is not adequately dealt with.

The monitoring methodology requires collection of additional project data, clarification and documentation on certain assumptions for emission and other factors, clarification on certain analyses, and a description of the QA/QC procedures that are being enforced.

(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):* >> Natural Gas-Fired Cogeneration Plant Replacing Oil-Fired Boilers.

(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 is applicable to projects replacing (i) process heat from on-site oil-fired boilers and (ii) grid electricity, by onsite natural gas fired cogeneration plants. The methodology consists of five steps:

1) Additionality testing based on an financial analysis of the baseline and project options with limited assessment of barriers.
2) Calculation of baseline carbon emissions values for displaced grid power based on a simple build margin model and historic (two years) facility electricity usage, IPCC Guidelines emission factors, and assumptions on grid thermal power generation efficiency.
3) Calculation of baseline on-site emission values for displaced oil usage and IPCC Guidelines emission factors and historic (two year) usage.
4) Calculation of project natural gas emission values using IPCC Guidelines emission factors and estimated on-site usage data for 2004
5) Calculation of emission reductions using the difference between project CO_2 emission values and baseline CO_2 emission values per tonne of corn processed (applicable only to corn projects) multiplied by the corn produced during the project activity year.

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:

>> Not sure as the baseline has two sources of CO_2 emissions - fuel oil and grid electricity. The approach as per paragraphj 48 (a) of the CDM modalities and procedures for fuel oil use is all right but for grid electricity it is more likely approach as per paragraph 48 (c) or (b) but not paragraph 48 (a) of the CDM modalities and procedures. "Existing actual or historical emissions, as applicable." "The average emissions of similar project activities undertaken in the previous five years, in similar social, economic,

environmental and technological circumstances, and whose performance is among the top 20 percent of their category". "Emissions from technology that represents an economically attractive course of action, taking into account barriers to investment".

Justification is required for the following:

- Additionality calculation using the financial model - this approach is not convincing and other approaches such as the Barrier Analysis or Common Practice Analysis indicated in EB16 Annex 1 might be more convincing. Explanations are required if the costs are annualized, why there is no variable costs for oil fired boilers, what is the scrap value or other value of the oil-fired boilers that are replaced (this should be included as a negative cost or benefit under the natural gas option, specially as some boilers are new (project specific)).
- Calculation of baseline electricity use – the build margin approach is probably appropriate however the generic assumptions of grid electricity production efficiency are not well documented
- Calculation of "adjusted" baseline emissions using the ratio of current year and baseline annual corn production is not validated and may not be appropriate. Also has limitations in that it will result in new (additional) capacity benefiting from ERs when this capacity was not part of the baseline. Changes in process technology that may result in ERs being allocated to fuel switching and to efficiency improvements (double counting). Also, It needs to be determined that the output before and after the project activity is homogeneous.

Baseline emissions for electricity production are calculated incorrectly. (Quantity of natural gas for electricity production (of what amount?), M3)*(Energy content of natural gas, 35.99 MJ/M3)*(Carbon emission factor for natural gas, 15.3 kg C/GJ)*44/12, divided by 1000, to determine tons of carbon dioxide in metric tons. In addition to the inherent weakness of the methodology where it is assumed that all electricity is generated using a fixed conversion efficiency, the amount of electricity needs to be specified somewhere to convert it to quantity of gas (with the given assumptions, which are not valid by themselves).

(2) Basis for determining the baseline scenario:

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

>> The explanation for the choice of baseline scenario is not clear. It suggests a baseline of natural gas additions to the grid, but provides project specific examples of how this has not happened. The documentation only explains how the baseline emission factors are determined and how the baseline emissions are calculated (though not correctly).

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

>> The basic underlying rationales consist of:

- The project will not displace hydro electric power, but instead will displace thermal generation units that are and will continue to be built in Brazil.
- The project will displace historic fuel oil consumption at the facility.
- Baseline electricity and thermal usage are directly proportional to corn production rates
- In the formulae for project activity gas used for electricity and heat can be split (normally this is not possible).
- No formulae to account for electricity sales to the grid or purchase of grid electricity during the project activity - is this always assumed to be zero?

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 additionality argument is based primarily on the financial viability argument with what appears to be a summary of a spreadsheet analysis of a single project. The additionality argument in the methodology

is not convincingly applied to the project.

- There is no documentation of the analyses and assumptions (are the results presented annualized costs, what is the scrap value, how were the discount rates determined, what is the price of oil and gas, why there are no variable costs for oil)
- The results, as described, indicate only about a 2% difference between the baseline and project cases – (though project-specific) it does not demonstrate convincingly the additionality of the project activity.
- The analyses is (probably) for a first year of operation and if the project cost is removed from the first year analyses the results indicate that the project has about a one year simple payback – that means that the project is very economical compared to the baseline (project-specific)
- No life-cycle or sensitivity analysis is provided and project economics for this type of project are highly sensitive to fuel and electricity costs fluctuations

The project activity could be additional if the Barrier test approach was used.

A critical element of the baseline scenario is adjusting baseline emissions using a ratio of "actual post-installation corn production" divided by baseline (2000/2001) annual corn production. This approach is not validated and is not adequate. The impact of additional capacity, technological change in the process leading to double counting of ERs could result. (see above Section).

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 and additionality is not adequately described and the methodology does not require (provide for) appropriate documentation.

(3) Assessment of the description of the proposed methodology and its applicability

a) State whether the methodology has been described in an adequate manner:

>> The methodology is not adequately described and there are concerns about the validity of certain key assumptions.

The use of the corn production volumes for calibration of baseline emission values may be a good metric for defining predicted and actual emissions reductions. However, the period of analyses, 2 year average of pre-installation data, was used to determine an emissions value. Why is the average used and not the lower value in the interest of being conservative? Also, any variation in plant production processes (for example, those that affect energy consumption per ton of corn processed) and product changes are not addressed by this methodology. In addition, the emissions associated with power sales to the grid, auxiliary loads, and the fuel consumption characteristics of variable electrical output of the combined-cycle technology are not explicitly covered through this "ratio" approach.

There is a great deal of repetition within the project design and methodologies forms. In some places more details are required, for example, that related to carrying out the financial analysis.

Application of the "Tool for the demonstration and assessment of additionality" with a precise listing of parameters to measure would improve the methodology.

The methodology provides different grid electricity heat values on page 15 and 16 (though this is project specific it is a relevant issue to the proposed methodology).

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):

>> More clarification and documentation is required to determine if the methodology is appropriate or 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.

>> No. As stated above there are many issues to be elaborated or explained.

Please explain:

>> Please see AI and a) 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 methodology proposed is very project specific and not adequate. A number of improvements would need to be made in order to move from project-specific to general approach, for example, relating industrial production volumes to calibrate baseline emission values, determining grid electricity efficiency.

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

>> The information related to on-site oil and electricity consumption is "local" and the displaced emissions form grid electricity is "national". The methodology provides no generic guidance on how to determine spatial boundaries – of particular importance for the displaced grid electricity.

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:

>> From the proposed methodology: "Baseline data are taken from the baseline period of 2 years 2000 and 2001. The monitoring and verification plan specifies that the actual emission reductions will be based on actual performance data for each year for which emission credits are to be claimed."

The baseline data from an average of only two years of operation is not adequate. (Note that the data for the two years is averaged and not shown for each year). The draft CDM-PDD shows that such projects are subject to significant fluctuation in corn production rates (approximately 1.6 million tons for the average of years 2000 and 2001 versus approximately 800,000 for 2004). This indicates that additional baseline data should be used for estimating emission reductions and calibrating the emission reduction algorithms that utilize corn production rates. The data sources are outdated using 2001 country plans which have been revised substantially.

(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

>> CO_2 from electricity production (using natural gas) and onsite fuel oil combustion.

ii) Physical delineation

>> Brazil national electric grid and existing fuel oil boilers for baseline, and only the cogeneration system for the project activity.

b) Indicate whether this project boundary is appropriate:

>> The specification of the boundary is not appropriate. Oil boilers replaced can still be used and thus must be included within the project boundary and analyses (as many are described to be fairly recent and some bought after the project activity started (project-specific)). The definition of project boundary leads to a problem of leakage. The project boundary should be the entire plant/facility, or systems where heat and electricity are generated and used.

(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:

>> Key assumptions for the baseline emissions are associated with emission factors for natural gas and fuel oil, assumptions about the future characteristics of Brazilian power market, and information on operations at the project facility. Key assumptions for additionality are information on Brazilian cogeneration market and economic factors associated with financial analysis of project. An important implicit assumption is the validity of calibrating emissions reductions to corn production rates. The latter assumption are problematic (as explained earlier).

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

>> The key assumptions concerning the baseline data and electric grid markets are transparent with the exception of:

- Efficiency of Brazilian natural gas fueled power generation (which is incidentally very low and different on different pages of the CDM-NMB);
- Proving individual year data versus aggregated data; and
- No validation of the relationship between baseline emissions and corn processed. Processing technology, process, and products are implicitly assumed not to change.

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

>> No. The methodology is very project and country specific and some assumptions are not adequately justified or validated.

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

>> Information on the Brazilian market appears to be publicly available. Some assumptions, such as efficiency of power production, are missing. On site data, such as corn production rates and baseline fuel usage, rely on company provided documentation. The QA/QC process is not transparently described.

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

>> Use of official data whereever used are adequate. Use of facility data would require an audit documentation procedure.

f) State possible data gaps:

>> The data gaps may consist of efficiency of power production, historical on site energy usage and production data, post-installation project gas usage for steam and electricity production, electricity sales/purchase from the grid during project activity and its incorporation in emission reductions estimation.

(7) Assessment of uncertainties:

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

i) The basis for determining the baseline scenario:

>> Not assessed.

ii) Algorithms/formulae:

>> Not assessed.

iii) Key assumptions:

>> Not assessed.

iv) Data:

>> Not assessed.

b) State whether the uncertainties presented are reasonable:

>> Uncertainties related analysis and discussion is required in the methodology.

(8) Leakage:

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

>> Leakage is defined as the net change of anthropogenic emissions by sources of greenhouse gases which occurs outside the project boundary, and which is measurable and attributable to the CDM project activity. The only explicit leakage discussion relates to physical "leakage" of natural gas from pipelines.

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

>> The discussion of leakage is limited and needs to be augmented with the the following items:

- Auxiliary boilers (and Heat Recovery Steam Generator - HRSG) fuel consumption which may be utilized when the cogeneration system is not operating and
- Power purchase from the grid and/or fuel oil use when the cogeneration system is not operating or providing sufficient quantities of steam and/or not providing sufficient quantities of electricity.

If the project has a marginal impact on grid electricity, then there is additional leakage from the gas distribution pipeline to the facility. Another leakage is from the use of existing oil boilers on the facility or else include sale proceeds in the financial analysis.

(9) Transparency and "conservativeness":

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

>> With respect to the build margin approach for displaced grid power the methodology is developed in a transparent way. However, as noted elsewhere a number of assumptions are either not documented (e.g. efficiency of grid electrical generation from natural gas) or not validated with respect to other aspects of the baseline methodology or are stated incorrectly.

b) State whether the baseline methodology is conservative:

>> For a grid with predominately hydro based generation, it is possible, as described in the methodology, for the grid electricity displaced by a new cogeneration system to be from the "build margin" but these need not always be natural gas fueled power plants. Discussion on page 6 indicates the difficulty in setting up gas based systems yet this is assumed to be the baseline. Without further documentation and validation it is not possible to tell whether are other aspects of the methodology are conservative or not.

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

>>

Strength:

- Could be developed as a methodology for hydro dominated systems subject to several modifications.

Weakness:

- Methodology is not stand alone and complete. See above.

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

>> Information is provided on Brazilian electricity markets. How this is incorporated in the methodology needs to be strengthened. One impression the project specific CDM-NMB creates is that gas fired is difficult to establish yet this is taken as the baseline.

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

>> If this methodology incorporates improvements and modifications to address the gaps it would be applicable for industrial cogeneration projects for which emission rates can be correlated to an industrial plant's product production levels and for which data can be collected on historical and post-installation project.

- Industrial production quantities,
- On-site electricity, natural gas and fuel oil use, and
- Grid electricity characteristics in terms of emission rates per unit of electricity production for hydro dominated grids.

(13) Any other comments:

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

>> Public Comment submitted by Ralph Harthan, EB, "Tool for the demonstration and assessment of additionality", "Small grid-connected zero-emissions renewable electricity generation"(AM0005), "Natural gas-based package cogeneration" (AM0014), and "Bagasse-based cogeneration connected to an electricity grid" (AM0015) (by reviewers).

b) Indicate any further comments:

>> No further comments.

II. Proposed new monitoring methodology *(specify title here):* >> Natural Gas-Fired Cogeneration Plant Replacing Oil-Fired Boilers.

In respect of the proposed new monitoring methodology, evaluate each section of CDM-NMM to the draft CDM-PDD. Please provide your comments section by section:

(1) Brief description of new methodology:

Describe new methodology:

>> The proposed methodology involves collection of the following data, as recorded for other purposes at the project site: natural gas consumed by the cogeneration system; amount of electricity and heat supplied to the industrial plant by the cogeneration system; amount of electricity sold to the grid (if any); and production in terms of tons of corn processed at the project plant.

(2) Key assumptions/parameters:

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

>> According to the methodology project emissions derive from just two sources: consumption of energy (natural gas) for production of steam and consumption of energy (natural gas) for production of electricity. The implied assumption is that the only project emissions will be associated with fuel consumption by cogeneration system. This is problematic since this specifically excludes emissions associated with:

- Fuel consumption (oil or natural gas) in backup boilers for steam production when the cogeneration system is not operating or providing inadequate quantities of steam, and
- Fuel consumption associated with purchases of electricity from the grid when the cogeneration system is not operating or providing inadequate quantities of electricity
- fuel consumption that may be used to supplementary fire the Heat Recovery Steam Generator (HRSG) - it is not known if this feature is available with this specific project, but is common in many cogeneration projects)

The cogeneration will always have some "down-time" during the year to, at a minimum, address maintenance.

As discussed in the review of the baseline methodology, the monitoring methodology (and analyses) relies on the validity of using the corn production values to calibrate baseline emission estimates. If processed corn products are different, requirements for heat and electricity per tonne may differ from that in the baseline. Therefore, it is necessary to monitor corn products.

How do electricity sales to the grid get translated to emission reductions (ERs)?

Aslo steam is measured in tonnes only, no pressure and temperature recorded/monitored.

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

>> Documentation and further explanation required concerning: monitoring methodology, collection methods for all required data, and QA/QC procedures.

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

>> The methodology is not adequate (see above).

(3) Data sources and data quality:

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

>> The data sources are primarily on site data collection and assumptions about grid electricity.

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

>> As QA/QC procedures are not defined in any way, it is not possible to determine the adequacy, accuracy, etc. of the data sources and quality. Also, as noted above, some required data collection is not included.

c) S*tate possible data gaps:*

>> Information on fuel use on-site not directly associated with fuel input to the cogeneration gas turbines (e.g. boilers and HRSG) and power sales from and to grid after project installation.

(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 proposed methodology has not been described adequately and is a repetition of material in the baseline methodology and does not cover key aspects of data collection, analyses and QA/QC.

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 methodology is not appropriate and requires modifications to match the modified baseline methodology.

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

>> The methodology is compatible with the baseline methodology, but as discussed both are inadequate.

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

>> Leakage is minimally addressed and dismissed. Does not cover all possible leakage that should be included in the baseline and monitoring methodology.

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

>> QA/QC is mentioned but no description is provided of what the QA/QC procedures will actually be and how they ensure data integrity, accuracy, etc.

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

>> The strength of the proposed methodology is that it relies on what should be readily available on-site data available at almost all cogeneration project facilities. The weaknesses are the lack of explained QA/QC procedures, inadequate documentation of analyses and assumptions, and missing data that should be collected.

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

>> If the methodology is revised significantly it could be applicable to other industrial cogeneration projects under similar circumstances (e.g. for hydro dominated grids).

(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:

>> None.

b) Indicate any further comments:

>> No further comments.

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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