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:	6 - 9 September 2005
Related F-CDM-NM document ID number (electronically available to EB members)	F-CDM-NM-0118: "Specific Consumption Rate Projection for Demand-Side Brewery Energy Saving Processes"
Related F-CDM-NMex document ID number(s) (electronically available to EB members)	F-CDM-NMex0118: Michaelowa / Maldonaldo
Related F-CDM-NMpu document ID number(s) (electronically available to EB members)	F-CDM-NMpu0118: Murayama Shigeo

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. Preliminary recommendations by the Meth Panel

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

Title of proposed new baseline methodology:>> Specific consumption rate projection for demand-side brewery energy saving processes.

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):

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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):

>> The methodology is applicable for project activities in the brewery sector that:

- Install integrated retrofit high energy efficiency applications (both on the demand- and supply-side) in the beer brewery production process if it does not result in new production facility with separate/new energy utility system.
- The project does not set its crediting period beyond the physical capacity of the existing utility system.

ii. Required changes:

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- Description of the methodology.

  Fundamental redrafting is needed for the methodology to improve the general presentation of the methodology. The methodology lacks a clear, transparent and straightforward step-by-step description. The project activity and the different baseline options under consideration are not very clearly described, which makes an assessment of the methodology difficult. Refer to section BI 3(a) for more specific issues.

- Identification of the baseline scenario.

  A procedure to determine the most likely baseline scenario is provided, but the result is pre-qualified and not the result of the application of the methodology: a particular situation is considered as the baseline. Furthermore, the final test of additionality is not clearly separated from the identification of the baseline scenario. Identification of the baseline scenario should be improved as per BI 2(d). The methodology developers may consider using the "Tool for the demonstration and assessment of additionality".

- Applicability conditions.

  The proposed applicability conditions are mostly inappropriate and comprise partly the application of the methodology (e.g. on additionality). The applicability conditions, the baseline determination and the additionality testing are mixed and therefore not clear and straight-forward. The applicability conditions should be changed and project-specific conditions or conditions that refer to testing of additionality should be removed (See BI 13(b)).

- Regression analysis.

  The methodology builds on a regression analysis, which is not developed and described in a methodologically sound manner and should be improved (see BI 3(d)). In particular, the uncertainty associated with the regression analysis has not been addressed. In applying the regression analysis, it is also quite unclear on what basis the "lager equivalents" should be determined. Uncertainties in the regression analysis should be quantified as this is one of the major drawbacks of the methodology.

- Emission factor for electricity.

  The approach adopted for the carbon emission factor for grid electricity, considering BM = 0, is not appropriate since the size of the displaced capacity alone is not a justifiable reason to neglect the build margin. Methodology developers should consider the combined margin emission factor approach.

- Capacity increases.

  The increase of capacity during the crediting period is methodologically not adequately taken into account. Implicitly, it is assumed that the historical energy intensity would also be an appropriate baseline for any increased beer production capacity, which may not necessarily be the case.

- Vintage of data.

  The vintage of data used (18 months) for the determination of the baseline scenario is not very appropriate. The vintage of historic data used for ex-ante calculation of baseline parameters should be extended to at least three years.

- Renewal of crediting period.

  The guidance relating to the renewal of the crediting period is not clearly described and appears impossible to implement since the baseline emissions are determined based on historical data.

- Other Issues.

  - The baseline fuel mix is assumed to be the same as project fuel mix. The project proponents may consider selecting the less carbon intensive fuel mix from the historical

and project fuel mixes.

- The methodology needs to specify how calculation of energy intensities will be facilitated for beer types that have not been produced before the start of the project activity. As the methodology now stands baseline emissions could not be claimed for those beer types.

(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

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i. Reasons for non-approval:

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(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: >> Specific consumption rate projection for demand-side brewery energy saving processes.

a. To approve this proposed methodology with minor changes

☐

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

☒

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

>> The methodology is applicable for project activities in the brewery sector that:

- Install integrated retrofit high energy efficiency applications (both on the demand- and supply-side) in the beer brewery production process if it does not result in new production facility with separate/new energy utility system.
- The project does not set its crediting period beyond the physical capacity of the existing utility system.

ii. Required changes:

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- Some of the parameters in the monitoring methodology are not defined (see BII 4(a)). These parameters should be defined.
- Method of direct measurement of methane emissions from open lagoon should be clearly described. The methodology developers may also refer to approved methodologies AM0013 “Forced methane extraction from organic waste-water treatment plants for grid-connected electricity supply”and AM0022 “Avoided Wastewater and On-site Energy Use Emissions in the Industrial Sector”for an alternate method to estimate methane baseline emissions from open

lagoons.

- The monitoring methodology needs generally a better and further elaboration.

(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:

>>

(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):* >> Specific consumption rate projection for demand-side brewery energy saving processes.

(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 consists of three steps:

- Step 1: Check of applicability conditions of the methodology to the project activity;
- Step 2: Determination of the baseline scenario by examining 3 pre-defined scenarios (including energy efficiency technologies and wastewater treatment options). Parts of the "Tool for the demonstration and assessment of additionality" are used in determining the baseline scenario;
- Step 3: Calculation of baseline emissions.

The methodology is meant to be designed for project activities in the brewery sector that install integrated retrofit high energy efficiency applications (both on the demand- and supply-side) in the beer brewery production process. The methodology is only meant to be applicable to a project activity if:

- The project does not set its crediting period beyond the lifetime of existing utility system;
- The project includes biogas recovery and its use in a boiler to produce heat and/or electricity;
- Integrated highly efficient energy technologies are not current practice in the host country (penetration rate less than 10%) and energy conservation measures have low priority among the relevant decision-makers in the host country;
- If reduction of energy costs is not the most economically attractive course of action;
- If the grid electricity displaced by the project activity is small enough to neglect the build margin component for calculation of the grid electricity emission factor.

The methodology identifies the baseline scenario from among a number of generalized scenarios by taking into account:

- The local regulation on wastewater;
- Technical feasibility of the energy savings technologies applied;
- Determination of the most economically attractive course of action.

The methodology pre-qualifies the baseline scenario to be the utilization of the current level of energy saving system (which may include simple energy saving technology for relatively expensive fuel) and

continuation of current practice for wastewater treatment.

The methodology estimates baseline emissions employing regression models. The regression models quantify the relation between beer production levels and specific energy consumptions of electricity and heat. Historical data for specific energy consumptions and beer production for the past 18 months are used to fit the regressions. The specific energy consumption as a function of the volume of beer produced (regression curve) are fixed ex-ante and are applied throughout the crediting period.

b) State the approach selected:

>> The approach selected is as per paragraph 48 (a) of the CDM modalities and procedures: "Emissions from a technology that represents an economically attractive course of action, taking into account barriers to investment".

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 selected is partly appropriate because the selection of the baseline scenario in the profit-orientated brewery sector should be based on economic considerations. However, the approach outlined in paragraph 48 (a) of the CDM modalities and procedures: "Existing actual or historical emissions, as applicable" should be used as well since baseline emissions are modelled based on historic emission levels.

(2) Basis for determining the baseline scenario:

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

>> The methodology explains how the baseline scenario is to be determined.

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

>> Baseline emissions are the sum of emissions due to electricity and heat consumptions before project implementation. If an anaerobic lagoon system is in operation before implementation of the project activity, CH_4 emissions are also accounted for as baseline emissions.

Emissions due to electricity and heat consumption are the sum of annual production measured ex-post of all specific categories of beer produced, multiplied by an adjustment factor, multiplied by the sum of the product of the specific ex-ante energy intensity and the CO_2 emission factor for each specific type of energy consumed (electricity, diesel, coal, etc). T&D losses are accounted for. The adjustment factor for each specific category of beer is based on a "lager-equivalence concept".

The specific energy intensity of beer production of the specific type of energy consumed for electricity and heat production is established in the following manner:

- Plotting of historical data on beer production as a function of specific consumption rate of electricity and fuel (each separate);
- Development of a regression formula;
- Conversion of the specific energy consumption rate in terms of total electricity and heat consumption into specific energy intensities for each specific fuel/electricity source.

The CO_2 emission factor of electricity supplied from the grid is calculated using an operating margin approach (neglecting the build margin) with data taken from the grid operator.

Project emissions are estimated as the amount of annual beer production, times the specific ex-post measured energy intensity of beer production, times the CO_2 emission factor of the fuel/electricity taking, into account T&D losses for the emission factor of external electricity.

c) State whether the documentation explains how, through the use of the methodology, it can be demonstrated that a project activity is additional and therefore not the baseline scenario. If so, what are the tools provided by the project participants?

>> The methodology identifies additionality through the process of determining the baseline scenario. An investment analysis test is conducted to determine the most-likely baseline scenario, whereby non-attractive options are removed from the list of possible scenarios, including the project scenario. If the project scenario is not an economically attractive course of action, it is concluded that the project is additional.

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

>> It is not appropriate and adequate for the following reasons:

- The methodology mixes additionality testing with the selection of baseline scenario, which is not appropriate. Although it is appropriate to use parts of the tool for the demonstration and assessment of additionality to determine the baseline scenario, testing of additionality should be done separately;
- Pre-qualification of a certain baseline scenario is not appropriate since the most likely baseline scenario should be identified in the application of the methodology;
- Testing of the economical attractiveness of the integrated energy-saving system including biogas recovery is problematic as components of the system might be more economically attractive than others. As a minimum, determination of baseline supply-side energy efficiency improvements (e.g. biogas recovery) should be selected separately from the demand-side energy efficiency improvements baseline;
- Applicability conditions are used to determine the baseline scenario, which is not appropriate. Applicability conditions should only apply to the "project" and not the "baseline". For, example, applicability conditions 4 and 5 should be demonstrated as part of an additionality test but not used as applicability conditions.

(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 not been described in an adequate manner for the following reasons:

- Generally, the description of the methodology is quite difficult to understand. The project activity and the different baseline options under consideration are not very clearly described but remain quite vague. The language is often not very precise but remains vague. The different steps of the methodology are not clearly separated (in particular applicability conditions, baseline scenario determination and additionality), making it difficult to apply the methodology in a clear manner, step by step. The nomenclature used in the equations is very confusing since sometimes the same symbols are used to describe different quantities. Any revision of the methodology should aim to improve the general presentation.
- It is not clear how to estimate the "lager-equivalent" energy consumption factor for electricity and heat.
- The regression analysis for determination of the specific energy consumption (electricity and heat) of beer production leaves considerable room for adjustment of results in specific situations. However, the methodology does not describe how the analysis should be adjusted.
- The methodology also allows the use of data from other sources, if similar technologies and fuels are used, for the regression analysis in case the existing data does not provide a significant statistical significance. The methodology does not identify specific similarities in technologies and the degree of similarity in fuels, which leaves this issue vague for the application of the methodology.
- It is not very clear why the example regression analysis in the CDM-NMB is conducted for coal, since on page 18 it is explained that the specific energy consumption (SEC) is to be determined for electricity and heat (which also makes more sense).
- The methodology does not adequately describe how to decompose the specific energy consumption for heat into specific fuels.

- The methodology states that "at the renewable of the crediting period, the assessment of specific energy consumption is to be done". It not very clear, on what basis the energy intensity should be re-assessed at the renewal of the crediting period, since the data at that point in time includes the energy efficiency improvements undertaken as part of the project activity. More specific guidance would be required on what procedures should be followed at the renewal of the crediting period.
- The project boundary is not described consistently. In the table on page 16 of the CDM-NMB certain emission sources are declared to be in the project boundary (N_2O from fuel combustion, CO_2 from transportation, gaseous effluent), but at the same time it is mentioned that they do not need to be monitored. The gases included in that table do not fit with the equations provided. It is further unclear, why N_2O from fossil fuel combustion is mentioned but not CH_4.
- The description of leakage sources appears not consistent with the project boundary. Several emissions sources are discussed, which are included in the project boundary.
- In the applicability conditions it is stated that the crediting period should not be set beyond the physical lifetime of the existing system. This is appropriate but needs further elaboration. For example, it needs to be clarified how the technical lifetime of the existing facility is to be determined and justified. It is further stated that the baseline scenario may be changed beyond the lifetime of the existing system. Additional guidance would be required on how to estimate the lifetime of the facility.
- The methodological approach to calculate emission reductions from avoidance of methane emission in wastewater treatment is insufficient. It remains quite unclear how the "annual methane emissions" from an anaerobic pond should be directly measured (that appears rather difficult).

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 proposed methodology is not appropriate for the proposed project in determining the specific energy consumption regression for electricity since the regression gives an R^2 value of 0.08, which is very low. This implies that regression analysis is not appropriate for such a case.

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.

Please explain:

>> The methodology suffers from the following problems:

Regression analysis

- The regression equation is mathematically incorrect since it adds a term to the regression which represent the theoretical lowest specific consumption rate. This is done to ensure that the fitted regression does not predict incorrect estimates, especially for high production rates. There are two solutions for this problem. The first is to set the value predicted by the regression to the minimum theoretical specific energy consumption in case the regression predicts a smaller value. The second is to subtract this theoretical minimum value from all historical values of specific energy consumption before fitting the regression.
- There are no limitations set on using the regression. It is not appropriate to extrapolate values of specific energy consumption when the relationship is not known from the historical data.
- No quantification of uncertainty has been conducted for the regression. This is a major drawback of the methodology. This issue must be fixed since the regression is associated with a high uncertainty and may consequently have a significant effect on the level of baseline emissions.
- No test for the statistical significance of the parameters used in the regression is provided. It should also be demonstrated that no other independent parameters have an influence on the prediction of specific electricity and energy consumptions.
- The methodology does not include a test of autocorrelation of beer production values before fitting the regression. One of the assumptions that must be satisfied in a regression is that the variable x should not be correlated. If autocorrelation exist, time series analysis should be used instead of the regression.

Other issues

- The methodology includes the possibility that the capacity of beer production is increased. However, it is implicitly assumed that the historic energy intensity is also the most likely baseline scenario for the increased beer production. However, this is not necessarily the case. Any increased beer production could occur with less energy intensity than the historic production. Thus, a different baseline may apply for the capacity increase.
- It is explicitly assumed that the electricity generation by the project activity from the recovered biogas is too small to have an impact on the build margin. This is not acceptable since the size of the displaced capacity alone is not a justifiable reason for neglecting the build margin.
- The methodology explicitly assumes that the baseline fuel mix ratio for heat generation is the same as in the project scenario. This is not necessarily the case. The most likely fuel mix in the absence of the project activity should be clearly identified and justified, for example by using historic data for the fuel mix ratio. This reasoning also applies for the in-house power generation.
- The methodology does not clearly address potential substitution effects between electricity and heat generation. As a result, emission reductions or increases may not only occur as a result of energy efficiency measures but also due to fuel switch components (e.g. switching from a carbon intensive fuel for heat to a less carbon-intensive emission factor for electricity, or vice versa).

(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):

>> In principle, the formulae presented in the methodology could be applied to other energy-saving retrofit project activities in a brewery. However, the proposed project activity is a rather specific combination of demand-side and supply-side measures as well as a certain treatment of wastewater. In addition, some parameters are not transparently described such as the lager-equivalent energy consumption factors. Also, some improvement to the nomenclature should be done to avoid confusion.

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

>> Local: project site data; appropriate.

Regional/national: national electricity grid including all power generation sources, fuel suppliers data; appropriate.

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

>> The methodology requires all data required for ex-ante calculation of energy intensity to be available for 18 months. This period is not appropriate and should be extended to at least three years to be consistent with other approved electricity generation methodologies. Note furthermore that footnote 10 (page 18 of the CDM-NMB) states that "beer production differs very much by month because the demand depends on temperature, etc". An 18-months data set would therefore not cover different seasons in a comparable manner.

For all other parameters ex-post measurements should be carried out at least on a monthly basis.

(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 fuel combustion for heat or electricity generation and CH_4 from waste water; appropriate.

ii) Physical delineation

>> Facility site (brewery) and the national electricity grid including all power generation sources connected.

b) Indicate whether this project boundary is appropriate:

>> Yes, the project boundary is in principle appropriate, but described in a confusing manner (see comment above).

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:

>>

Explicit assumptions:

- The regression analysis leads to significant results. This assumption is problematic as statistical significance depends on the number of measurements used to fit the regression.
- Electricity generation by the project activity from the recovered biogas and from any energy efficiency demand-side measures is too small to have an impact on the build margin. This may be the case, but the methodology should justify this assumption and be more specific in which cases this assumption may apply. Interviews with the grid operator are not sufficient to prove this.
- The methodology explicitly assumes that the baseline fuel mix ratio for heat generation is the same as in the project scenario. This is not necessarily the case. The most likely fuel mix in the absence of the project activity should be clearly identified and justified, for example by using historic data for the fuel mix ratio. This reasoning also applies for the in-house power generation.

Implicit assumptions:

- The methodology implicitly assumes that the regression curve adequately represents the energy intensity rate for heat and electricity consumption if the production capacity of the brewery is increased. This is problematic (see item 3 (c)).
- It is implicitly assumed that the brewery will not produce new types of beer that have not been produced before the start of the project activity. Otherwise, the energy intensities do not exist for such beer types and baseline emissions cannot be calculated as a consequence. This appears problematic.
- It is assumed that the beer authority in the host country can adequately judge significance of results of the regression analysis.

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

>> Some of the key assumptions are not arrived at in a transparent manner.

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

>> Some assumptions are not adequate. The reason is given in (6) a) for each individual problematic assumption.

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

>> Carbon emission factor of fuels: fuel supplier or measurement by sampling.

Carbon emission factor of electricity: plants at the operating margin as judged by the grid operator.

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

>> Carbon emission factor of fuels: adequate, accurate and reliable.

Carbon emission factor of electricity: could be adequate but not sufficient justification is provided.

f) State possible data gaps:

>> Historic beer production (per beverage type) and data required for calculation of energy intensities both in terms of electricity/heat as well as electricity/fuel may not be readily available.

(7) Assessment of uncertainties:

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

i) The basis for determining the baseline scenario:

>> The methodology mentions a number of relevant uncertainties qualitatively:

- Energy consumption pattern for beverage production in the baseline scenario, especially if other products than beer are produced;
- Carbon emission factor of coal;
- Carbon emission factor of grid electricity;
- CO_2 emissions from transport of fuel.

Uncertainties not named: No quantification of uncertainty has been conducted for the regression, which is a major drawback in the methodology. This issue must be fixed since the regression is associated with high uncertainty and which may have a high effect on overestimation of the baseline.

ii) Algorithms/formulae:

>> Uncertainties are not quantified.

iii) Key assumptions:

>> The methodology does not include a test of autocorrelation of beer production values before fitting the regression. One of the assumptions that must be satisfied in a regression analysis is that the x variable should not be correlated.

iv) Data:

>> No quantification of uncertainty in data has been proposed.

b) State whether the uncertainties presented are reasonable:

>> The analysis of uncertainties presented is not adequate. The uncertainty in the estimation of the specific energy consumptions, which in turn affects the uncertainty in baseline emissions, is not quantified. This is a major drawback of the methodology and should be considered.

(8) Leakage:

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

>> Leakage is not taken into account.

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

>> Yes, treatment of leakage is appropriate.

(9) Transparency and "conservativeness":

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

>> The methodology lacks transparency on:

- The approach used for estimation of an adjustment factor for each specific category of beer based on the "lager-equivalence concept"
- The determination of the carbon emission factor of grid electricity is not transparent. Interviews with the grid operator are proposed rather than a transparent procedure for calculation based on publicly available data.
- The regression analysis for determination of the specific energy consumption (electricity and heat) of beer production leaves considerable room for adjustment of results in specific situations. However, the methodology does not transparently describe how the results should be adjusted.

b) State whether the baseline methodology is conservative:

>> No, it is not conservative as it might potentially lead to an overestimation of emission reductions (see (3) c).

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

>>

Strengths:

- Methodology tries to simplify the baseline scenario determination process in a project environment where the potential baseline scenarios are manifold due to the application of several distinct energy saving technologies.
- Methodology tries to incorporate two project types (demand-side and supply-side energy efficiency) in one methodology.

Weaknesses:

- The central feature of the methodology, the regression analysis, cannot facilitate accurate calculation of emission reductions under its current design and with the vintage of data proposed.
- The regression equation is mathematically incorrect since it adds a term to the regression which represents the theoretical lowest specific consumption rate. This is done to ensure that the fitted regression does not predict incorrect estimates, especially for high production rates. There are two solutions for this problem. The first is to set the value predicted by the regression to the minimum theoretical specific energy consumption in case the regression predicts a smaller value. The second is to subtract this theoretical minimum value from all historical values of specific energy consumption before fitting the regression.
- There are no limitations set on using the regression. It is not appropriate to extrapolate values of specific energy consumption when the relationship is not known from the historical data.
- The methodology should specify how a statistically representative sample will be used to fit the regression.
- No quantification of uncertainty has been conducted for the regression, which is a major drawback in the methodology. This issue must be fixed since the regression is associated with high uncertainty and which may have a high effect on overestimation of the baseline.
- The methodology does not include a test of autocorrelation of beer production values before fitting the regression. One of the assumptions that must be satisfied in a regression that the x variable should not be correlated.
- The methodology contains some very project-specific applicability conditions, which should be removed to widen its range of applicability.
- The baseline determination is confounded with applicability conditions and thus essentially the outcome pre-determined.
- Lacks transparency.

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

>> National circumstances are taken into account when it states that one should assume compliance with relevant regulations under the baseline activities unaffected by the CDM.

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

>> The methodology is applicable to energy efficiency improvement projects in the brewery sector and can potentially be expanded to cover other food and beverage industries.

(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:

>> No.

b) Indicate any further comments:

>> Applicability conditions 3, 4,5 and 6 should be removed. Condition 3 limits the applicability of the methodology to projects where biogas will be collected and used in a boiler. Other energy efficiency projects may be implemented without having to collect and utilize the biogas, and thus this condition will limit the use of this methodology to these types of projects. Condition 4 and 5 should be addressed during determination of additionality of the project. Condition 6 for neglecting the build margin is not appropriate as described above in BI 3 (c). Moreover, Applicability condition number 1 needs further clarification on how to treat expansion in production capacity.

II. Proposed new monitoring methodology *(specify title here):* >> Specific consumption rate projection for demand-side brewery energy saving processes.

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 methodology is meant to be designed for project activities that install integrated retrofit high energy efficiency applications (both on the demand- and supply-side) in the beer brewery production process. The methodology aims at monitoring data for beer production, energy consumption by source before and after implementation of project. Also, methane emissions from anaerobic lagoon treatment and organic waste are monitored before project implementation and adjusted by organic waste monitored after implementation.

(2) Key assumptions/parameters:

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

>> See item 6 (a) in the baseline methodology above.

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

>> See item 6 (b) in the baseline methodology above.

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

>> See item 6 (c) in the baseline methodology 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):

>> See item 6 (d) in the baseline methodology above.

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

>> See item 6 (e) in the baseline methodology above.

c) *State possible data gaps:*

>> See item 6 (f) in the baseline methodology above.

(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. It is not stated in the monitoring methodology how to estimate the lager-equivalent energy consumption factor for both electricity and heat. Moreover, it is not specifically described in the methodology how should energy consumption by source be monitored. Also, some parameters mentioned in the monitoring methodology have not been defined e.g. $IP_{k,y}$, $P\_Energy_{k,y}$, $P_{y,}$ and IB_{heat}. It is also not sufficiently specified how direct measurement of methane emissions from lagoon and organic waste should be done.

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. The proposed methodology is not adequate for the referred proposed project activity because the underlying baseline methodology is, in parts, not adequate for the referred project activity.

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

>> Yes.

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

>> Monitoring of leakage is not necessary.

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

>> There are some indicative QA/QC procedures. The assessment of the uncertainty level appears quite inappropriate.

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

>> The monitoring methodology avoids using default values and tries as much as possible to measure the relevant parameters.

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

>> The methodology is applicable to energy efficiency improvement projects in the brewery sector under quite specific circumstances (see baseline methodology) and could potentially be expanded to cover other food and beverage industries.

(9) Any other comments:

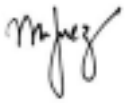
a) State whether any other source of information (i.e. other than documentation on this proposed methodology available on the UNFCCC CDM web site) has been used by you in evaluating this methodology. If so, please provide specific references:

>> None.

b) Indicate any further comments:

>> No further comments.

Signature of Meth Panel Chair ……..
Date: 14 / 09 /05 *(Jean-Jacques Becker)*



Signature of Meth Panel Vice-Chair ……..
Date: 14 / 09 /05 *(José Miguez)*

Information to be completed by the secretariat	
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