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:	17 - 19 October 2005
Related F-CDM-NM document ID number (electronically available to EB members)	F-CDM-NM-0118: "Introduction of integrated demand-side energy saving system for existing beer brewing system"
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. Final 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):

>>

ii. Minor changes:

>>

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;
- Where the project does not set its crediting period beyond the physical capacity of the existing energy supply system or other equipment being replaced or retrofitted as part of the project activity;
- Where the project does not export electricity or heat;
- Where the project activity does not emit waste water that decomposes under anaerobic conditions;

- Where the project activity does not involve power and heat generation in combined heat and power (CHP) plants;
- Where significant data on energy consumption, beer production and efficiencies of the existing process prior to project implementation are available.

ii. Required changes:

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- **Description of the methodology**. The description of the methodology has improved considerably but still needs further improvements. Particularly, a number of terms (e.g. "theoretical energy audit model") are introduced but not further explained. The use of theoretical energy audit model to determine key parameters for the calculation of emission reductions needs further justification and explanation. Other issues are explained in section BI 3(a) below.
- **Identification of the baseline scenario**. A procedure to determine the most likely baseline scenario is provided based on the draft consolidated methodology for coal mine methane recovery. While this procedure is in principle appropriate, the identification of plausible baseline scenario candidates is not appropriate, since they involve different production levels of beer. Baseline scenario candidates for this type of energy efficiency improvements are only comparable if they refer to the same amount of output (beer production) as in the project scenario.
- **Regression analysis**. The methodology builds on a regression analysis, which has significantly improved. However, there is a problem with the regression since it is based on monthly data, but the predictions of specific energy consumptions are made based on annual production levels. This is not correct and monthly data should be used for predicting baseline specific energy consumptions. It is also quite unclear how the pilsner-equivalent energy consumption factor is determined from the energy audit model. More description and requirements of the model should be provided as previously mentioned. The methodology now acknowledges quantification of uncertainties and proposes to use either 80% or 95% confidence level. The Meth panel recommends the use of 95% confidence level. The methodology should present equations to be used in estimating uncertainties in predictions of the regression. Also, the methodology should restrict the use of the regression to beer production range of the historical data used to fit the regression.
- **Applicability conditions.** Applicability condition number 6 is only applicable for the monitoring methodology. This condition also applies to the baseline methodology since the regression which is used to estimate baseline emissions also uses 3 years operation data. Also, an applicability condition should be added to limit the use of methodology to non-expansion of existing capacity of the energy utility system. Otherwise, a proposal should be provided to account for cases where energy intensity decreases as a result of increased beer production which requires expansion of capacity of existing utility system.
- **Lifetime of existing equipment**. 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 still needs further elaboration in the proper methodology. The methodology suggests that project participants should explain "why the lifetime of the energy supply system is much longer than the end of the crediting period". This pre-qualifies that this is the case. In addition, the methodology "does not specify the concrete evidences but leaves methods for confirmation to the DOE's expert judgment". Consistent with other approved methodologies (e.g. ACM0002 "Greenhouse gas emission reductions through landfill gas capture and flaring where the baseline is established by a public concession contract", AM0023 "Leak reduction from natural gas pipeline compressor or gate stations") the methodology should provide methodological options on how project participants can determine the lifetime of the existing equipment. This should become part of the methodology (and not only part of the applicability conditions).
- **Use of a "theoretical energy audit model".** The methodology heavily builds on the application of a theoretical energy audit model. Key parameters for the calculation of emission reductions are

determined with this model. However, any description or requirements regarding this model are not provided. The use of such models requires further descriptions and possibly requirements.

- **Renewal of crediting period**. Appropriate guidance relating to the renewal of the crediting period is not provided (in section J it is stated that guidance will be developed after appropriate decisions by the Executive Board). On page 22 concrete guidance is provided, which, however, cannot be applied as counterfactual measurements are required. Project proponent is encouraged to refer to annex 7 of EB20 report for guidance relating to renewal of crediting period and provide a proposal for handling this issue in line with this guidance.

(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;
- Where the project does not set its crediting period beyond the physical capacity of the existing energy supply system or other equipment being replaced or retrofitted as part of the project activity;
- Where the project does not export electricity or heat;
- Where the project activity does not emit waste water that decomposes under anaerobic conditions;
- Where the project activity does not involve power and heat generation in combined heat and power (CHP) plants;
- Where significant data on energy consumption, beer production and efficiencies of the existing

process prior to project implementation are available;

ii. Required changes:

>>

- The methodology should specifically state which type of equipment should be used to monitor different energy consumptions. Also, QA/QC procedures for each equipment should be specified.

(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:

>>

(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 applicability conditions of the methodology to the project activity;
- Step 2: Determination of the most likely baseline scenario, using partly the procedure proposed in the draft consolidated methodology for coal mine methane recovery;
- Step 3: Calculation of baseline emissions based on a regression analysis.

The methodology is supposed to be 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. The methodology is suggested to be applicable to a project activity if:

- The project does not involve the construction of a new/additional beer production facility;
- The project does not set its crediting period beyond the lifetime of existing utility system;
- The project does not export electricity or heat to the outside of the beer factory;
- The project does not emit effluent water under an anaerobic condition in the open air.

The methodology identifies the most likely baseline scenario with a thorough procedure that is based on the procedure in the draft consolidated methodology for coal mine methane recovery. The procedure involves the following steps:

1. Identification of technically feasible options, including the project activity not implemented as a CDM project activity;
2. Elimination of options that do not comply with legal or regulatory requirements;
3. Formulation of plausible baseline scenario candidates from the technical options identified;

4. Elimination of plausible baseline scenario candidates that face prohibitive barriers;
5. Choice of either the most conservative or the economically most attractive scenario among the candidate scenarios that remain from Step 4;
6. Check whether the selected baseline scenario is common practice.

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 3 years 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: "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 is appropriate since this methodology is only applicable if the continuation of the current situation is the most likely baseline scenario (although this is not explicitly stated).

(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 comprise CO_2 emissions from fossil fuel combustion for heat and electricity generation (on-site and/or grid) for the production of beer in the absence of the project activity. The methodology implicitly calculates baseline emissions by assuming that the historical level of energy efficiency would continue in the absence of the project activity.

Baseline 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 electricity and heat intensity of beer production (MWh/l) is established with regression analyses in the following manner:

- Plotting of historical data on beer production as a function of specific consumption rate of electricity and heat (each separate);
- Development of a regression formula.

The intensities are then converted to CO_2 emission intensities, reflecting the grid or captive power emissions intensity and the emissions intensity of heat generation. The CO_2 emission factor of electricity supplied from the grid is calculated using ACM0002.

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 determines additionality through the "Tool for the demonstration and assessment of additionality".

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

>> The identification of the baseline scenario builds on the draft consolidated methodology for coal mine methane recovery and has improved considerably since the last version of the methodology. Nevertheless, there are a number of important issues that need to be addressed:

- In Step 1 of the procedure to determine the most likely baseline scenario, the options considered refer to different quantities of beer production. As a consequence, the different options are not comparable with respect to their level of energy efficiency. The continuation of the current situation, the shut-down of the facility and the expansion of beer production or not comparable scenarios with respect to the level of energy efficiency in the plant. The methodology should rather focus on different configurations to produce the same quantity of beer.
- As stated already in the preliminary recommendation, demand-side and supply-side measures (affecting the on-site energy supply system) are not directly comparable: They do not exclude each other but could be combined. A clear differentiation between demand-side and supply-side measures would be helpful. Furthermore, the technological options listed should not be exclusive.
- A number of expressions are introduced that are not further explained and are not totally clear. This refers to "integrated technology system", "steam pressure recovery" (recovery of the condensing stream?), "energy saving by biomass CO_2 recovery" (What is meant here? What biomass? Recovery at which point in the process? Where do the energy savings result from?), "packaging process improvements" (what type of improvements?), ", etc.
- In Step 4a, it is not clear how the existence of barrier should be demonstrated by a "theoretical calculation using an energy utility audit model".
- The methodology suggest in Table CDM-NMB-2 that it is applicable in cases where the energy supply system is either identical to the pre-project situation or is being modified, including the possibility that it is modified after the project start. However, this is not at all reflected in the calculations of baseline emissions. In contrast, the approach to calculate baseline emissions implicitly assumes that the current energy supply system is not modified in the absence of the project activity.
- In Figure CDM-NMB-3, reference to additionality assessment should be removed from the determination of the baseline scenario.

The assessment of additionality with the consolidated "Tool for the demonstration and assessment of additionality" is appropriate.

(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 description of the methodology has improved since the first submissions but is still not fully adequate:

- 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 nomenclature used in the equations is very confusing since sometimes the same symbols are used to describe different quantities. A number of expressions are used that are not further explained but that are not self-explanatory (e.g. the reference to an "energy audit model", theoretical model calculations which are not explained, etc). A revision of the methodology should aim to further improve the general presentation.
- It is not clear how to estimate the "pilsner-equivalent" energy consumption factor for electricity and

heat. The reference to a "theoretical energy audit model" is not sufficient.

- The regression analysis for determination of the specific energy consumption (electricity and heat) of beer production considers cases for correction in specific situations. However, the methodology does not describe how the analysis should be adjusted.
- The example regression analysis in the CDM-NMB is conducted for coal but should be undertaken for heat, since it is elsewhere explained that the specific energy consumption (SEC) is to be determined for electricity and heat (which also makes more sense). This is confusing but can be fixed easily, since in the specific project context, only coal has been used.
- The methodology should provide equations for the decomposition of specific heat consumption into specific fuels.
- The methodology states (page 22) 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 description of leakage sources is not fully consistent. Potential methane emissions from anaerobic treatment of waste water at the project site are under the control of project participants and are – correctly – also discussed under the project boundary. They should therefore not be discussed in the leakage section.
- 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 still needs further elaboration in the proper methodology. The methodology suggests that project participants should explain "why the lifetime of the energy supply system is much longer than the end of the crediting period". This pre-qualifies that this is the case. In addition, the methodology "does not specify the concrete evidences but leaves methods for confirmation to the DOE's expert judgment". Consistent with other approved methodologies (e.g. ACM0002, AM00023) the methodology should provide methodological options how project participants can determine the lifetime of the existing equipment. This should become part of the methodology (and not only part of the applicability conditions).
- The methodology does address the situation where heat and electricity are generated in combined heat and power (CHP) plants. The methodology should either exclude such situations in the applicability conditions or provide respective methodological approaches.
- The methodology assumes that no methane emissions are present in the project in case of utilizing an anaerobic wastewater system with methane recovery for energy use. This assumption may not be valid. Physical leakage as well as efficiency of methane destruction in electricity generation should be accounted for.

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 could be appropriate for the proposed project if there is a significant statistical relation in the application of the regression analysis.

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

- There are no limitations set on using the regression (the range of production levels where the regression is valid). It is not appropriate to extrapolate values of specific energy consumption when the relationship is not known from the historical data;

- The methodology now acknowledges quantification of uncertainties and proposes to use either 80% or 95% confidence level. The Meth Panel recommends the use of 95% confidence level to be consistent with other approved methodologies. Also, the methodology should present equations to be used in estimating uncertainties in predictions of the regression;
- The methodology has now included an assessment of the statistical significance of the regression parameters. However, the guidance on what significance is required to apply the methodology appears too arbitrary ("If the available data cannot provide a statistically significant conclusion, the methodology cannot be used for the case."). It would be better to quantify the 95% as an acceptable confidence level;
- There is a major problem with the regression since the regression is based on monthly data, but the predictions of specific energy consumptions are based on annual production levels. This is not correct and monthly data should be used for predicting baseline specific energy consumptions;
- In addition, the correction of data should not be related to the statistical significance ("If some insignificance is found, the project participants should modify the data with suitable correction or adjustment"). This is clearly inappropriate. Corrections should be undertaken where project participants have clear indications that values are outliers and not correct but not because the sample is not statistically significant;
- It is mentioned on page 22 that correction is to be done due to mixing of fuel consumption and electricity consumption if electricity is used as an alternative fuel. It is not clear how will such correction be made;
- It is not clear how will production levels be adjusted for the temperature and stock change as stated in the methodology.

Other issues

- A further major problem of the methodology is that the methodology includes the possibility that the capacity of beer production is increased and thereby implicitly assumes 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. This issue is related to the fact the candidate baseline scenarios are not comparable, i.e. different quantities of beer production are compared;
- The methodology should ensure that emission reductions cannot be generated from shutting down a captive power plant (if the grid emission factor is lower than the captive power emission factor) or from increasing on-site power generation (if the grid emission factor is higher than the captive power emission factor). A simple methodological approach would be to consider the lower emission factor in the baseline scenario. Also, the assumption that the internal specific energy consumption in the baseline is equal to that of the project should be justified;
- The definition of $SEC^{PJ}_{k,y}$ is stated as specific energy consumption rate of the project scenario. This should be corrected to specific energy consumption rate for each energy source k of the project scenario.

(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.

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

>> Local: project site data are appropriate.

Regional/national: national electricity grid including all power generation sources, fuel suppliers data are 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 3 years. This seems appropriate.

(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.

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. However, a number of issues are confusing:

- The Figure CDM-NMB-3 is confusing, since the consumption of fossil fuels at the project site seems to be excluded from the project boundary. This is not consistent with the Table CDM-NMB-1.
- In Table CDM-NMB-1, the information on whether a gas is inside or outside the project boundary is not totally consistent with the justification and the calculation of emission reductions: The table suggests that CO_2, CH_4 and N_2O emissions are included. This should be corrected, since apparently only CO_2 emissions are included.
- The Note under Table CDM-NMB-1 ("The internal power generation system is not a part of the project activity even if it is inside the project boundary") is confusing and inappropriate. Power generation should be either part of the project activity and then be included in the project boundary or not be part of the project boundary and then be excluded from the project boundary.

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 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:

- It is implicitly assumed that key parameters for the determination of emission reductions can be determined in an adequate manner with a "theoretical energy audit calculation" (e.g. pilsner equivalent). The method does not further specify any descriptions or requirements regarding this calculation. This is not appropriate. It should be clarified, which tools are reasonable to determine these key parameters and how exactly they should be determined;
- It is implicitly assumed that the historical level of energy efficiency is also appropriate for capacity expansions of beer production. This assumption is not appropriate, since modifications of the energy supply system may be required in order to be able to increase beer production in the absence of the project activity.

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:

>> No uncertainty is addressed.

ii) Algorithms/formulae:

>> The methodology now acknowledges quantification of uncertainties and proposes to use either 80% or 95% confidence level. The Meth panel suggest the use of 95% confidence level to be consistent with other approved methodologies. Also, the methodology should present equations to be used in estimating uncertainties in predictions of the regression.

iii) Key assumptions:

>> None.

iv) Data:

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

b) State whether the uncertainties presented are reasonable:

>> They are reasonable, except for the stated issues that needs to be addressed.

(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" needs further elaboration;
- The regression analysis for determination of the specific energy consumption (electricity and heat) of beer production proposes corrections in some cases which is not transparently described.

b) State whether the baseline methodology is conservative:

>> Considering uncertainties in the regression now will lead to conservative estimation of baseline emissions.

(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, needs some improvements;
- 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.

(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:

>> None.

b) Indicate any further comments:

>> No further comments.

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 in the beer brewery production process. The methodology aims at monitoring data for beer production, energy consumption by source before and after implementation of the project activity.

(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 pilsner-equivalent energy consumption factor for both electricity and heat. Moreover, it is not specifically described in the methodology how energy consumption by source should be monitored.

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):

>> Yes. The proposed methodology is adequate for the referred proposed project activity given that the stated minor comments are addressed.

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. Some QA/QC procedures are needed to be described for the monitoring equipment for energy consumptions.

(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: 24/10/05 *(Jean-Jacques Becker)*

Signature of Meth Panel Vice-Chair ……..

Date: 24/10/05 *(José Miguez)*

Information to be completed by the secretariat	
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