CDM: Proposed new methodology expert form (version 03)

(To be used by methodology experts providing desk review for a proposed new methodology)

Name of expert responsible for completing and submitting this form	Agus P. Sari
Related F-CDM-NM document ID number	NM0082

Note to those completing this form, as applicable: Please provide recommendations on the proposed new baseline and monitoring methodologies based on an assessment of annexes 3 and 4 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. Evaluation of the proposed new methodologies by desk reviewers:

I. Evaluation of the porposed new baseline methodology:

Title of new baseline methodology:>>Baseline methodology for the production of sugar cane based bio-ethanol for transportation use (NM0082)

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

>>The proposed methodology is applicable to other potential projects under the following conditions:

Production and use of bio-ethanol nationally is constrained;

Alternative, non-bio-ethanol, fuels are not envisaged in the course of the project activity;

There is no enforceable mandate to produce and use bio-ethanol to replace gasoline in the transport sector;

It can be readily verified that the produced bio-ethanol will be used as fuel to replace gasoline in the transport sector.

Unless it is improved, the proposed methodology can only be applied when gasoline is domestically-produced.

ii. Strengths and weaknesses of the methodology:

>>The strength of the proposed methodology is that it appears to be robust. The weakness of the methodology is that it doesn't have explicit boundary, it uses international data that may lead to inaccuracies, albeit moe conservative.

iii. Any changes needed to improve the methodology:

a. Minor changes:>>

b. Major changes: >>Divide the gasoline supply into domestically-produced and imported. Use well-to-wheel analysis to calculate emissions from domestically produced gasoline, and use only tank-to-wheel analysis to calculate imported gasoline, plus the associated emissions from transporting the fuel. Add the emissions from domestically-produced gasoline with imported gasoline. Replace the emissions associated with the portion to be replaced by bio-ethanol with emissions associated with producing and transporting bio-ethanol.
Better yet, if the distribution company to which the bio-ethanol will be sold, and if the sources of gasoline supplied to the company is known (either domestically-produced or imported), then just calculate this portion using the above method.
Also, take into account the possibility of the bio-ethanol actually not combusted, either because it is not purchased or exported.
Take into account the reduction of vehicular fuel efficiency.

Address the leakage better.

II. Evaluation of the proposed new monitoring methodology:

Title of new monitoring methodology: >>Monitoring methodology for the production of sugar cane based bio-ethanol for transportation use.

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

>>The monitoring plan doesn't include specific conditions, and stated to be used in conjunction with the proposed baseline methodology. The proposed baseline methodology is applicable to other potential projects under the following conditions:

Production and use of bio-ethanol nationally is constrained;

Alternative, non-bio-ethanol, fuels are not envisaged in the course of the project activity;

There is no enforceable mandate to produce and use bio-ethanol to replace gasoline in the transport sector;

It can be readily verified that the produced bio-ethanol will be used as fuel to replace gasoline in the transport sector.

Unless it is improved, the proposed methodology can only be applied when gasoline is domestically-produced.

ii. Strengths and weaknesses of the methodology:

>>The strengths of the methodology are its simplicity and ease of application. Its application is directly related to the baseline methodology outlined above, and it shares the strengths and weaknesses of the baseline methodology. Use of a life-cycle approach to emissions covers all potential emission sources but requires the use of external independent data. A more appropriate data are national data as they will improve accuracy, albeit less conservative.

iii. Any changes needed to improve the methodology:

a. Minor changes:>>

b. Major changes: >>The changes includes the consequent changes due to the suggested improvement of the proposed baseline methodology as in Section 2(d), above. Annual data of gasoline imports and calculation of their associated emissions need to be obtained. Vehicular fuel efficiency reductions resulting from the use of bio-ethanol in place of gasoline needs to be acquired, preferrably through direct measurements, but either experimental data or even some reliable source of information on this may be used.

B. Details of the evaluation of the proposed new methodology by the desk reviewer:

I. Proposed new baseline methodology *(specify title here):* >>Baseline methodology for the production of sugar cane based bio-ethanol for transportation use

(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 proposed methodology is applied to a proposal to develop a bio-ethanol production plant. The plant, to commence by 2005 is expected to produce bio-ethanol to partially replace gasoline as fuels for transportation. The emissions reductions from the replacement of gasoline by bio-ethanol is expected to be about 530,000 CO2-equivalent.

The proposed baseline methodology suggests that the "status quo", or the non-project situation is the baseline, and the proposed project is additional. The non-project emissions are derived from the production and combustion of gasoline in the transportation sector, which the bio-ethanol will replace.

b) State the approach selected:

>>The approach selected is 48(b), which is 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 appropriate approach of this type of project activity is somewhere in between 48(a) and (b), and therefore either one may be appropriate because currently the most economically-attractive course of action, taking into account barrier to investment, appears to be the continuation of the existing practice of using gasoline. Approach 48(a), existing actual or historical emissions, may also be appropriate since it reflects the baseline used in this proposed methodology. The choice of approach (b) requires demonstrations of investment additionality, which the proposed methodology tries to undertake.

(2) Basis for determining the baseline scenario:

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

>>The baseline scenarios are project and non-project options. The non-project is that the volume of bio-ethanol is not produced and not utilized as a transport fuel, and therefore the use of existing gasoline-based transport continues to prevail. The baseline is therefore the emissions associated with the production and combustion of the identified conventional transportation fuel to be replaced by bio-ethanol. However, the steps taken (Section D1 - D3) of the baseline documentation appears to explain only the notes on steps to be taken, and not the actual steps taken. These Sections need to be completed. Much of the information needed to review this section, however, can be found in the PDD. Sections (b), (c), and (d), below, therefore, are written based on the information provided by the PDD documentation, and not necessarily by the NMB documentation.

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

>>The first step in determining the baseline is the identification of the fuel to be replaced by the bio-ethanol. The documentation states that it is typically gasoline, although MTBE may also be displaced. Baseline emissions are calculated through life-cycle analysis of gasoline production and combustion (Well-to-wheel, which is divided into well-to-tank and tank-to-wheel). The well-to-tank calculation shows greenhouse gas emissions of 13.2 gCO2e/MJ (approximately 419.18 gCO2/liter), while the tank-to-wheel calculation shows greenhouse gas emission of 185 gCO2e/km (best estimate, approximately 2269.93 gCO2e/liter). The total emissions of the well-to-wheel calculation, therefore, is 2689.11 gCO2e/liter of gasoline. This may overstate the emissions associated with the use of gasoline. Section 2(d), below, shows the suggested improvements to differentiate imported and domestically-produced gasoline.

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?

>>This Section could have been answered by reviewing Section D.3 of the NMB documentation. However, Section D.3 does not explain how, through the use of the methodology, the additionality of the project activity can be demonstrated. Upon reviewing the PDD, however, Section B.3 of the PDD explains what should have been explained under Section D.3 of the NMB. It is advised to revise Section D.3 to reflect the information contained in Section B.3. The review below is based on the PDD, not on the NMB.

Section B.3. of the PDD explains the steps taken. The PDD documentation asserts that benchmark analysis (Option III) is used, since the project activity generates revenues other than those related to the CDM and the proposed project activity and the plausible baseline alternatives do not involve investments at comparable scale. The benchmark selected is the internal rate of return (IRR), and the benchmark hurdle used that the project IRR must overcome is the weighted average cost of capital (WACC), derived from the cost of debt adjusted for tax relief on interest payments, the cost of equity, and the shares of debt and equity in the total company market valuation. For a project to be worthwhile, its return must exceed the company's WACC.

The PDD also assumes that every unit of gasoline can be replaced by exactly one unit of bio-ethanol. This is a simplification that may lead to an overstatement of the additionality. Experiences from ethanol projects in other countries -- notably in Brazil -- shows that ethanol use may reduce vehicular fuel efficiency by about 6 - 8 percent. This may be small, but still significant. If this is the case, then every unit of bio-ethanol can only replace about 0.94 - 0.92 unit of gasoline.

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

>>The basis for determining baseline scenario and for assessing additionality needs improvement. First, the most common use of ethanol (bio- or otherwise) is to replace MTBE as an additive, not necessarily as fuel, even ethanol is increasingly used as replacement of gasoline. Accordingly, even when it may make

the baseline less conservative, if MTBE is clearly replaced by the bio-ethanol, it needs to be taken into account as it may change the baseline scenario.

Second, there is a need to separate domestically-produced gasoline from imported one. The full life-cycle analysis (from well to wheel) to determine baseline emissions may be overstated if emissions from production of imported gasoline is taken into account, since these emissions actually occur overseas. The full well-to-wheel life-cycle analysis is useful only for domestically-produced gasoline. For the imported gasoline, the well-to-wheel life-cycle analysis can be divided, as it is possible according to the PDD documentation, into well-to-tank and tank-to-wheel, and only the tank-to-wheel portion (plus possibly the border-to-tank to reflect the transport and distribution of the gasoline) is carried out to determine the emissions associated with the imported gasoline. This may make the baseline significantly more conservative, at the same time more reasonably reflecting the situation in the absence of the project activity (of course, the reduction of imported gasoline may lead to reduction of emissions at the producing countries due to reduction of gasoline use, but this is considered as (positive) leakage, and may not need to be included in the baseline methodology).

Third, in assessing additionality, the potential use of bio-ethanol to replace MTBE as additive in gasoline (the most common use of ethanol) needs to be taken into account, even when it may make the baseline less conservative, since it can make the baseline more reasonably represent the no-project situation.

Fourth, the reduction of vehicular fuel efficiency resulting from the use of bio-ethanol in place of gasoline may make the assumption of one-to-one replacement to be adjusted. It is therefore advisable to adjust the assumption to realistically reflect this reduction of efficiency. If experimental data are not available, any reliable reference on this may be used.

Fifth, since the proposed methodology chose to use approach 48 (b), it may be appropriate to show whether bio-ethanol is more expensive than gasoline on unit-to-unit comparison. In addition to show that the project activity can be made more financially attractive using the CDM than without CDM, the proposed methodology also need to demonstrate that, taking into account existing barriers to investment, the use of bio-ethanol is not more attractive financially than the use of gasoline.

(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 been described inadequately, and needs improvement. Section D3 of the baseline methodology (NMB) appears to be incomplete. It needs to be rewritten using the information available in Section B3 of the PDD.

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 Annex 3):

>>The proposed methodology can be made more appropriate by completing and improving it. Section 2(d), above, shows what can be improved from the methodology.

c) State whether the application of the methodology could result in a baseline scenario that reasonably represents the anthropogenic emissions by sources of greenhouse gases that would occur in the absence of the proposed project activity.

>>The application of the methodology could be improved to better represent emissions that would occur in the absence of the proposed project activity, as Section 2(d), above, will.

Please explain:

>>Most of the explanation can be found in Section 2(d), above. First, the "well-to-wheel" life-cycle analysis calculates emissions associated with production and combustion of gasoline. While this may be appropriate when applied to entirely domestically-produced gasoline, it is not appropriate to calculate emissions associated with imported gasoline since emissions associated with the production of gasoline abroad should not be accounted for in the baseline as it may lead to double counting and higher baseline emissions. While robust, the well-to-wheel life-cycle analysis has a different boundary from the project boundary.

Second, there appears to be no assessment that compares the price of gasoline and the price of bio-ethanol as a way to demonstrate additionality (that additional investment from CDM can reduce the price of bio-ethanol so that it can compete with gasoline). Comparing the IRR with and without CDM and the WACC with and without CDM, while robust, is not sufficient to determine additionality. These figures need to be compared with those of gasoline, i.e., whether the proposed bio-ethanol is currently non-competitive compared with gasoline, and whether CDM will make it more competitive.

Third, the one-to-one replacement rate between bio-ethanol and gasoline may lead to overstating the baseline, as the use of bio-ethanol may reduce the vehicular fuel efficiency. It needs to be corrected by a factor of 0.94 - 0.92, or any other, more appropriate figure that is either based on experimental data or reliable references.

(4) Assessment of algorithms/formulae and type of data needed:

a) State whether the description of the methodology includes algorithms and generic formulae that can be applied to other potential project activities (if not, the proposed new methodology will be considered as a project-specific methodology):

>>The description includes algorithms and generic formulae that can be applied to other potential project activities, but its applicability depends on how the algorithms and formulae be improved and national circumstances be included in the methodology, i.e., after the inclusion of data and algorithm that represent the portion of gasoline to be replaced by bio-ethanol, the portion of which that is domestically-produced, and the portion of which that is imported, as suggested in Section 2(d), above. Also the portion of the blended gasoline-ethanol that is actually combusted and those that are not combusted due either to not being purchased or exported. Lastly, the inclusion of the reduction of vehicular efficiency can also be made generic.

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

>>The spatial scope of data used to determine the baseline (well-to-wheel life-cycle assessment) is appropriate but not sufficient given the problem with the well-to-wheel life-cycle assessment applicability to imported gasoline. The "life-cycle emissions coefficient" needs to be differentiated between domestically-produced and imported. Whenever possible, domestic data should be used. Section 2(d) addresses this problem to use partial life-cycle analysis to deal with imported gasoline. The following are the spatial scope of data as stated in the NMB:

Baseline life-cycle emissions coefficient: international (conservative as the coefficient in developing countries tend to be higher -- but when available can increase accuracy); Project life-cycle emissions coefficient: international (conservative as the coefficient in developing countries tend to be higher -- but when available can increase accuracy); emissions coefficient: international (or IPCC default, which is conservative as the coefficient in developing countries tend to be higher); the transport emissions from transport needs in the project (project specific); other data are project specific.

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

>>The vintage of data used is appropriate. The vintage of data corresponds to the year of production of the bio-ethanol and the time of occurring of fuel switching. Generally, national data or official statistics or the IPCC default factors will not change overtime. Hence, vintage of data is not considered relevant. The vintage of data in the proposed methodology is therefore appropriate. The following is the vintage of data as stated in the NMB:

Baseline life-cycle emissions coefficient: 2002 (not expected to significantly change in the crediting period); project life-cycle emissions coefficient: 2004 (not expected to significantly change in the crediting period); IPCC emissions factor: 2002 (may change when national emissions factor is available); other data are measurable proprietary ones, so no vintage of data.

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

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

i) Gases and sources

>>The gases included is carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O). The sources include production, transport, and combustion for both project and baseline emissions.

ii) Physical delineation

>>The physical delineation is the life-cycle in the production and combustion of gasoline and of bio-ethanol (well-to-wheel).

b) Indicate whether this project boundary is appropriate:

>>The project boundary is slightly inappropriate since some of the gasoline to be replaced by the bio-ethanol is currently imported. Emissions from the production of the gasoline overseas may not be calculated as part of the proposed baseline boundary, as they are calculated in their own respective producing countries. The well-to-wheel analysis applied in the baseline has a different boundary than the project boundary. Improvement suggested in Section 2(d), which treats domestically-produced gasoline and imported gasoline, addresses this problem.

(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 are as follows:

First, the well-to-wheel life-cycle analysis assumes implicitly that the gasoline is produced domestically.

Second, 100 percent of the biodiesel is actually combusted;

Third, the penetration of the use of natural gas (or other alternative fuels) will not influence the baseline;

Fourth, the barrier to using bio-ethanol as a replacement of gasoline is not economic competitiveness;

Fifth, every unit of bio-diesel can replace exactly one unit of petro-diesel.

Sixth, emissions factors are IPCC default.

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

>>The key assumptions are transparent except the first, second, and fourth.

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

>>The assumptions make the approach less conservative except the sixth.

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

>>Gasoline life-cycle emissions coefficient (based on European data, and the use in developing country is deemed conservative); project emissions coefficient (from the data in Brazil); emissions factor for transport fuels for gasoline baseline (IPCC 1996); transport emissions (proprietary, updated annually); fuel efficiency (manufacturers' data); transport emissions from transport needs in baseline and in project activity (proprietary); volume of bio-fuel produced and sold for use in transport (proprietary);

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

>>the data used can be improved. While they are consistent, accurate, and reliable, they are not adequate. Data on the life-cycle emissions for imported gasoline and domestically-produced one need to be differentiated; vehicular fuel efficiency reduction needs to be found.

f) State possible data gaps:

>>The following are the possible data gaps:

First, there should be data showing the portions of domestically-produced and imported gasoline supply,

and the associated emissions arising from the imported gasoline. The data on well-to-wheel life-cycle analysis -- which is divided into well-to-tank and tank-to-wheel -- to calculate emissions from gasoline is not entirely appropriate, since emissions from the production of gasoline, if imported, should not be taken into account as they occur overseas and therefore risking double-counting. The well-to-wheel analysis can only be applied to domestically-produced gasoline. For the imported gasoline, the tank-to-wheel should be sufficient (plus the associated transport emissions to import and distribute the gasoline).

Second, there should be at least a statistical data showing the amount of gasoline sold, which part of its gasoline supply will be replaced by the bio-ethanol, and a verified estimates on the total sales of the bio-ethanol mixed gasoline. Uncertainties regarding the sales of bio-ethanol should be taken into account. As it stands now, it is implicitly assumed that 100 percent of the bio-ethanol will be used (although the monitoring methodology does address this issue by verifying the amount of bio-ethanol that is actually combusted or purchased).

Third, there should be data representing the comparison of price between gasoline and bio-ethanol and whether financial infusion from CDM makes bio-ethanol more competitive compared to gasoline.

Fourth, there should be data representing the reduction in vehicular fuel efficiency. The best source is experimental data, but reliable reference may be used.

(7) Assessment of uncertainties:

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

i) The basis for determining the baseline scenario:

>>The documentation of the proposed methodology includes uncertainties regarding the extent to which the production of bio-ethanol will lead to reduced emissions and the level of emissions associated with the production of ethanol. The applicability criteria as stated in the documentation may be able to deal with these uncertainty.

ii) Algorithms/formulae:

>>The methodology includes uncertainties regarding the algorithms / formulae

iii) Key assumptions:

>>The methodology does not include uncertainty in the key assumptions, but appropriate monitoring methodology may address this.

iv) Data:

>>The methodology includes uncertainties in the data as they are based on international data. Development of national data and appropriate monitoring methodology may reduce uncertainties.

b) State whether the uncertainties presented are reasonable:

>>The uncertainties presented are reasonable, but can be improved. For example, the extent that the use of bio-ethanol may reduce emissions differ from one type of vehicle with another, not only due to the emissions factors but also due to different changes in vehicular fuel efficiencies due to the use of bio-ethanol in place of gasoline. These uncertainties have not been dealt with in the proposed methodology, while recognizing its complexity.

(8) Leakage:

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

>>The proposed baseline methodology addresses the potential leakage, but can be improved, as noted in point (b), below.

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

>>The treatment for leakage is appropriate, but can be improved. For example, due to the improvement as suggested in Section 2(d), above, the reduction of the use of gasoline resulting from the project activity may reduce the production of gasoline in the producing countries. While this is not included in the emissions reduction, this is a positive leakage.

Possible negative leakage may already be included in the life-cycle analysis of the production of bio-ethanol, in which the need for raw materials may lead to additional "deemed" emissions. But this is not transparent in the proposed methodology.

The plantations used to produce bio-ethanol -- for example sucar cane -- may have some emissions associated with them. While planting sugar-cane plantations may lead to positive leakage due to unaccounted for sequestration, if the plantations replace higher biomass density areas, a potential negative leakage may exist.

(9) Transparency and "conservativeness":

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

>>The baseline methodology was developed in a transparent way due to the use of pre-determined emission factors.

b) State whether the baseline methodology is conservative:

>>The baseline methodology is conservative, or at least attempts to be conservative. However, an improvement of the methodology as suggested in Section 2(d), above, can make it even more conservative.

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

>>Life cycle analysis is a robust methodology, and therefore is the strength of this proposed methodology. However, the well-to-wheel life-cycle analysis is not entirely appropriate as they have different boundary with project boundary. Additionally, the use of international values for most of the coefficients -- including the life-cycle emissions -- may lead to inaccuracy and less robust values, albeit conservative. Suggested improvements in Section 2(d), above, may address some of the weaknesses.

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

>>The documentation states that national policies have been directly incorporated in to the demonstration of additionality and the applicability criteria for the methodology. Any subsidies will be incorporated within the financial analysis, whilst if there is an effective enforced mandate on the use of bio-ethanol fuel the proposed methodology is no longer applicable.

While this is correct, there are other national circumstances that need to be taken into account. The portions of domestically-produced gasoline and imported gasoline are important for the baseline emissions calculation, but not reflected in the proposed methodology. The economic competition between gasoline and bio-ethanol is not reflected in the proposed methodology.

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

>>If improved as suggested in Section 2(d), above, the proposed methodology can be applied across project types and regions.

(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:

>>Information regarding reduced efficiency due to the use of bio-ethanol in place of gasoline is obtained through case studies in Brazil (personal communication with Mr. Marcos Teixeira).

b) Indicate any further comments:

>>

II. Proposed new monitoring methodology *(specify title here):* >>Monitoring methodology for the production of sugar cane based bio-ethanol for transportation use

In respect of the proposed new monitoring methodology, evaluate each section of annex 4 to the

draft CDM PDD. Please provide your comments section by section:

(1) Brief description of new methodology:

Describe new methodology:

>>The proposed methodology is restricted to monitoring only the bio-ethanol production at the project activity site that is used as transportation fuel and emissions associated with the transport of the bio-ethanol from the distillery to the place of blending / distribution. The proposed methodology estimates "adjusted" baseline emissions (from the net emissions reduction coefficient) and "partial" project emissions (those associated with the transport of bio-ethanol from the distillery to the place of blending / distribution).

(2) Key assumptions/parameters:

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

>>The key assumption is the use of externally-sourced lifecycle emissions data for gasoline and sugar cane-based bio-ethanol.

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

>>The key assumptions are arrived at in a transparent manner.

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

>>The assumptions are adequate.

(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):

>>Distance of ethanol distribution (from measurement); fuel efficiency (from measurement); carbon emissions factor (from IPCC); blended gasoline purchased (from receipts of purchases).

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

>>The data used are adequate, consistent, accurate, and reliable.

c) *State possible data gaps:*

>> Portion of gasoline replaced that is domestically produced and imported. This can be obtained on a yearly basis from national statistics office.

(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 is described adequately.

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 annex 4):

>>The proposed methodology is appropriate.

c) State whether this proposed monitoring methodology is compatible with the proposed baseline methodology described in annex 3 of the draft CDM-PDD:

>>The proposed methodology is compatible with the proposed baseline methodology, provided that the proposed baseline methodology is improved as suggested in Section 2(d), above.

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

>>Leakage is claimed to be zero, which is not entirely correct as Section 8 (b) of the baseline methodology, above, states. The well-to-tank portion of the life-cycle analysis can be used to measure the positive leakage (emissions reduction) due to reduction of gasoline imports in the gasoline-producing countries. Annual data for gasoline imports can be obtained from the national statistics office.

The possible negative leakage in terms of the use of raw materials that lead to emissions outside the boundary of the project activity can be obtained by carrying out life-cycle analysis of the production and use of the raw materials, but this is admittedly complicated.

The possible negative leakage (one-time) of land-clearing due to sugar cane plantation can be calculated. The positive leakage due to sequestration can also be monitored, if so desired.

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

>>Only measurement and monitoring quality assurances are needed, and they are adequately addressed by the proposed monitoring methodology.

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

>>The strength of the proposed methodology is that it is simple and robust. The weakness is that it may require many small measurements. The use of international data may also render greater errors.

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

>>The proposed methodology is applicable across project types and regions.

(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:

>>

b) Indicate any further comments:

>>

Signature of desk reviewer ……..

Date: / /

Information to be completed by the secretariat	
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Date when the form was received at UNFCCC secretariat	
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