 <p style="text-align: center;"><b>CDM: Proposed New Methodology</b>  <b>Meth Panel recommendation to the Executive Board</b>  <b>(version 04)</b>  <i>(To be used by the Meth Panel to make a recommendation to the Board regarding a proposed new methodology)</i></p>	
Date of Meth Panel meeting:	14 - 17 June 2005
Related F-CDM-NM document ID number (electronically available to EB members)	F-CDM-NM0109: "Sunflower Methyl-Ester Biodiesel Projects in Thailand"
Related F-CDM-NMex document ID number(s) (electronically available to EB members)	F-CDM-Nmex0109: Mawandia / Moura Costa
Related F-CDM-NMpu document ID number(s) (electronically available to EB members)	F-CDM-Nmpu0109: None received
<p><i>Note to those completing this form, as applicable: Please provide recommendations on the proposed new baseline and monitoring methodologies based on an assessment of CDM-NMB and CDM-NMM and of their application in sections A to E of the draft CDM PDD, desk reviews and public input. Please ensure that the form is entirely filled and that arguments and expert judgements are substantiated.</i></p>	
<b>A. Final recommendations by the Meth Panel</b>	
<b>I. Recommendation on the proposed new baseline methodology: (checkmark the choice made)</b>	
Title of proposed new baseline methodology:>> Generalized baseline methodology for transportation Bio-fuel production with life-cycle-assessment (LCA).	
<p>a. To approve this proposed methodology with minor changes</p> <p><input type="checkbox"/></p> <p>i. Conditions under which this proposed methodology is applicable to other potential CDM project activities (e.g. project type, region, data availability):</p> <p>&gt;&gt;</p> <p>ii. Minor changes:</p> <p>&gt;&gt;</p>	
<p>b. To reconsider this proposed methodology, subject to required changes</p> <p><input type="checkbox"/></p> <p>i. Conditions under which the proposed methodology is applicable to other potential projects (e.g. project type, region, data availability):</p> <p>&gt;&gt;</p> <p>ii. Required changes:</p> <p>&gt;&gt;</p> <p><i>(Project participants shall make required changes to the proposed new methodology and send it back to the Meth Panel. The proposed new methodology will be reconsidered by the Meth Panel if changes required are made by the project participants. The Executive Board will only consider this proposed new methodology after the revised proposed methodology has been reconsidered by the Meth Panel.)</i></p>	

## c. Not to approve the proposed methodology



## i. Reasons for non-approval:

>> The proposed methodology presented several valuable innovative inputs that are useful for establishing a methodology for the considered project activities. However it presents also too many and too significant shortcomings and problems - detailed below - to be fixed and eventually approved without being first again fully assessed through the full review process. For that reason, the methodology proponents are invited to consider the views and suggestions made, and are encouraged to make a further submission.

- While the three parts structure (biomass supply, bio-fuel production, bio-fuel consumption) is clear and some innovative elements are welcome (prevention of decrease of forest and competition with afforestation/reforestation), sections A.3 (conditions under which the methodology is applicable to CDM project activities) and D.1 (how the methodology determines the baseline scenario) are rather long and confused. They are very difficult to follow and to understand in detail. As a consequence, it is difficult to check if there are no inconsistencies. As a result, we recommend redrafting the proposed methodology to make it clearer. A decision tree and/or a matrix listing the different applicability conditions at each stage may help, if feasible.
- Part of the confusion derives from the fact that numerous options are presented in the baseline scenario section but most of them are then immediately discarded as a result of applicability conditions that are difficult to understand. As a result, the methodology does not really provide a method to determine the baseline scenario. It rather imposes that the continuation of the current situation is the only possible scenario for all the three stages of activity, as a result of too restrictive applicability conditions.
- Baseline for the stage 1 (biomass supply): As a matter of fact it is not clear what the current situation means regarding the stage 1 (biomass supply): it should be asked to the project participant to describe the current situation, and what it means in terms of emissions or removals. What is required here is a land-use baseline scenario determination. It should also be established why this current situation would have continued, especially if there are farmers there that now accept to change their activity because of the project activity. Is the new culture more attractive economically? In that case is additionality still verified?
- Baseline for the bio-fuel production stage: it is not clear what could be the baseline scenario described as continuation of current practice for stage 2 (bio-fuel production), as stated p. 9. Most probably the baseline scenario should not be split in two different parts for the biomass supply and the bio-fuel production.
- To have “a signed letter of the land owner or the seller of the biomass to confirm that the project activity will not constrain the afforestation/reforestation activities” (condition a) or that “There are no other plans to utilize the area for other exclusive GHG emission reduction Activities” (condition b) cannot be an applicability condition since such a letter is required by the project developer who may offer some compensation to the owner and then the risk of conflict of interest is too high. Such letter cannot be used neither to establish the additionality of the project activity nor to eliminate possible baseline scenario regarding the land use of the area. A method to determine the land use scenario should be provided.
- Part of the confusion derives also from the fact that additionality considerations are mixed in the applicability conditions, i.e. condition (e) that stipulates that the project activity cannot be the most attractive course of action. Additionality is not a condition of applicability of a methodology; it is a condition of eligibility to CDM to be tested in the additionality section. Applicability conditions should detail technical conditions to be met by the project activity to ensure that the algorithms, the formulae and the value used in the methodology can be applied and provide sound conclusions. It is assumed by the methodology, as a key assumption, that the Bio-fuel produced by the plant shall be consumed as to displace fossil fuel based liquid fuels - Reservations can be expressed regarding this as there could be normal loss of the product on account of pilferage, spillage, damage etc. This aspect needs to be looked into. Possibility of exports to an Annex 1 country too

needs to be addressed suitably.

- Prevent double accounting: it should be set as a condition that the same emissions reductions will not be claimed by another CDM project activity intending to make the final consumers shift from petro to bio-diesel.
- Financial analysis: though the draft CDM-PDD does mention that the financial details are enclosed, it was not possible to locate it. In the absence of relevant details on the underlying assumptions used, it is difficult, if not impossible to comment on the validity of the financial analysis and results. Details of critical assumptions e.g. projected selling price of the bio diesel, details regarding the impact of CDM registration on the projects' viability, cost of the project activity, capital structure and the cost of funds etc. should be required by the methodology.
- Adjustment factor determination should be more detailed and justified, possibly supported by more disaggregated data (per type of vehicle) and adequate weighting.

*(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: >> [Generalised monitoring methodology for transportation bio-fuel production with life-cycle-assessment \(LCA\).](#)

a. To approve this proposed methodology with minor changes

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

>>

ii. Minor changes:

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

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

>>

ii. Required changes:

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

c. Not to approve the proposed methodology



i. Reasons for non-approval:

>> The monitoring methodology is not approved because the corresponding baseline methodology is not approved, for reasons described above. The required changes in the baseline methodology, detailed above, would necessitate significant changes to the proposed monitoring methodology.

*(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):** >> Generalized baseline methodology for transportation Bio-fuel production with LCA.

**(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 applies to project activities that produces biomass and transforms it in fuel that is then commercialized to substitute partially (blended) or fully fossil based transportation fuel. The methodology categorize the value-chain of the GHG emission reductions into three principal stages as follows:

- Biomass supply;
- Bio-fuel production;
- Bio-fuel consumption.

The methodology provides a set of applicability conditions for each of the here stages of the methodology. In order to identify the baseline scenario, the alternative scenario options are to be listed up for each stage under the no CER revenue condition. These options are narrowed down, by applying the applicability conditions, to the unique baseline scenario.

The applicability tool is applied with some minor modifications.

It then calculates the emissions of the baseline by calculating the equivalent volume of petro-fuel that would have to be used to deliver the same service, taking into account difference of fuel efficiency for km drive per Giga Joule.

Project emissions are calculated using Life-Cycle-Analysis (LCA) type assessment. The reasons why this methodology incorporates the LCA-type assessment is that the N<sub>2</sub>O emissions, especially indirect N<sub>2</sub>O emissions from synthetic fertilizer use, are comparable in size to the whole emission reductions.

*b) State the approach selected:*

>> The approach selected is as per paragraph 48 (b) 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:*

>> This is not clear at all why paragraph 48 (b) of the CDM modalities and procedures is chosen. It seems that paragraph 48 (a) could also have been chosen for such type of activity for which the economic analysis is not easy and mixes economic decisions of different agents. Emissions from a technology that represents an economically attractive course of action, taking into account barriers to investment”. “Existing actual or historical emissions, as applicable”. However, as matter of fact baseline emissions are not estimated from historical emission, but are recalculated from the output of the proposed project activity.

**(2) Basis for determining the baseline scenario:**

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

>> Yes, since as a matter of fact it discards all scenario except the current practice and the project itself.

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

>> The methodology proposes to compute the net GHG emissions reduction (in terms of CO<sub>2</sub>e) by comparing the GHG emissions on account of (i) the Baseline scenario i.e. the continued use of fossil fuel and (ii). The GHG emissions on account of the substitution of the fossil fuel by bio diesel / fuel.

It proposes to use the CO<sub>2</sub>e emitted on a complete life cycle basis by doing a life cycle analysis of the fossil fuel (proposed to be) replaced and the bio diesel / fuel produced.

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 refers to the “Tool for the demonstration and assessment of additionality”, which is in principle acceptable. However, additionality is addressed in a confused way by mixing additionality considerations in applicability conditions (see explanation below).

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

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- **Additionality and applicability conditions:** There is a vicious circle between the additionality section and the applicability conditions section in which it is stated that stipulates that the project activity cannot be the most attractive course of action (condition (e)). Additionality is not a condition of applicability of a methodology; it is a condition of eligibility to CDM to be tested in the additionality section. Applicability conditions should detail technical conditions to be met by the project activity to ensure that the algorithms, the formulae and the value used in the methodology can be apply and provide sound conclusions.
- **Use of the “Tool for the demonstration and assessment of additionality”:** In the additionality section (D.3), there is an attempt to provide a:
  - (a) Guideline of barriers specific to such type of activity that could be checked by project participants and
  - (b) A set of cost and revenue variable to be taken into account in the investment analysis. This is welcome but should be more systematic and better presented to become a real methodological aid. The methodology should request that elements that are necessary to check the investment analysis are provided. The consequences of that such a lack of elements are easily perceived in the associated draft CDM-PDD; though the draft CDM-PDD does mention that the financial details are enclosed, it was not possible to locate it. In the absence of relevant details on the underlying assumptions used, it is difficult, if not impossible to comment on the validity of the financial analysis and results. Details of critical assumptions e.g. projected selling price of the bio diesel, details regarding the impact of CDM registration on the projects viability, cost of the project activity, capital structure and the cost of funds etc. should be required by the methodology.
- **Determination of the baseline scenario:** While sections A.3 (applicability conditions) and D.1 (baseline determination) are difficult to follow, it seems that the methodology doesn't really provide a method to determine the baseline scenario. It rather imposes that the continuation of the current situation is the only possible scenario for all the three stages of activity, as a result of too restrictive applicability conditions. As a matter of fact it is not clear what the current situation means regarding the stage 1 (biomass supply): it should be asked to the project participant to describe the current situation, and what it means in terms of emissions or sequestration. It should also be asked why this current situation would have continued, especially if there are farmers there that now accept to change their activity because of the project activity. Is the new culture more attractive economically? In that case is

additionality still verified?

To have “a signed letter of the land owner or the seller of the biomass to confirm that the project activity will not constrain the afforestation/reforestation activities” (condition a) or that “There are no other plans to utilize the area for other exclusive GHG emission reduction Activities” (condition b) cannot be an applicability condition since such a letter is required by the project developer who may offer some compensation to the owner and then the risk of conflict of interest is too high. Such letter cannot be used neither to establish the additionality of the project activity nor to eliminate possible baseline scenario regarding the land use of the area. A method to determine the land use scenario should be provided.

And it seems that it would not affect so much the rest of the methodology in case the baseline includes for instance the farming of another non-energy crop.

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

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

>> Regarding the formulae to calculate baseline emissions, project emissions and emissions reduction, the answer is Yes.

However regarding applicability conditions, baseline scenario determination and additionality, the answer is no, as detailed below.

While the three parts structure (biomass supply, bio-fuel production, bio-fuel consumption) is clear and some innovative elements are welcome (prevention of decrease of forest and competition with afforestation/reforestation), sections A.3 (conditions under which the methodology is applicable to CDM project activities) and D.1 (how the methodology determines the baseline scenario) are rather long and confused. They are very difficult to follow and to understand in detail.

As one example of that, it is said that one applicability condition regarding the bio-fuel production is that: “The project is the optimal solution in its scale in the project participants’ decision making considering several barriers with economical consideration, if a Bio-Fuel production plant by using the same biomass is invested” (p.3)

Part of the confusion derives from the fact that numerous options are presented in the baseline scenario section but most of them are then immediately discarded as a result of applicability conditions that are difficult to understand.

As an illustration of that, regarding the biomass supply, among of the 7 options presented, only 2 are not excluded by the applicability conditions, which are the current practice – which is not very clear what it is, especially if the energy crop is already being produced - and the proposed project activity.

Regarding the bio-fuel production, the methodology imposes as conditions of applicability that (i) the project participant has no other alternative project and (ii) that the project activity is not “the most attractive course of action economically”, and then, later on, in the baseline scenario section (p 9), the methodology states that “Therefore, the only remained option is the continuation of current practice”, which is quite tautological. On top of that, it is difficult to imagine what would be the current practice for stage 2 (bio-fuel production).

Part of the confusion derives also from the fact that additionality considerations are mixed in the applicability conditions, i.e. condition (e) that stipulates that the project activity cannot be the most attractive course of action. Additionality is not a condition of applicability of a methodology; it is a condition of eligibility to CDM to be tested in the additionality section. Applicability conditions should detail technical conditions to be met by the project activity to ensure that the algorithms, the formulae and the value used in the methodology can be applied and provide sound conclusions.

As a consequence, it is difficult to check if there are no inconsistencies. A decision tree and/or a matrix listing the different applicability conditions at each stage may help, if feasible.

However, interestingly enough, the application of the method is easier to follow and understand in the draft CDM-PDD, leading to the conclusion that the proponent of the proposed methodology may not have been able so far to write it in a way that may make it more general than its specific application to that specific project activities.

As a result, we recommend redrafting the proposed methodology to make it more stand alone and replicable by other projects developers.

*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):*

>> It seems to be adequate, but this should be checked again when the methodology would have been redrafted, if it is.

*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:

>>

- For the biomass supply stage: see section 2. d, item 3), which basically explains that the too restrictive applicability conditions lead to avoid a real determination of the baseline scenario regarding the land use of the area where the energy biomass is produced.
- For the bio-fuel production stage: it is not clear what could be the baseline scenario described as continuation of current practice, as stated p. 9. Most probably the baseline scenario should not be split in two different parts for the biomass supply and the bio-fuel production

#### **(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):*

>> Regarding the formulae to calculate baseline emissions, project emissions and emissions reduction, the answer is yes.

>> The methodology tries to use local, host country data to the extent possible, together with IPCC defaults for certain issues e.g. N<sub>2</sub>O emissions on account of synthetic fertilizer use, which is 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:*

>> Most of the data proposed to be used would be monitored and thus of current vintage. The emission factor for the grid is based on the latest data provided by the Power Company, which is 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*

>>

- N<sub>2</sub>O - use of synthetic fertilizers at the plantation site
- CO<sub>2</sub> - use of fossil fuel at the plantation site, for transportation, use of grid generated electricity, steam plant site/facility.
- CH<sub>4</sub> - Fossil fuel use at the plantation site and for transportation related activities

*ii) Physical delineation*

>> The project boundary includes :

- The Plantation site;
- Transportation to the project site;
- The project site;
- The steam supply site;
- Transportation to the fuel supply facility;



- Fuel supply facility;
- All vehicles that use the bio diesel / fuel produced by the project activity.

*b) Indicate whether this project boundary is appropriate:*

>> The project boundary is generally appropriate; it would be desirable to also consider GHG emissions on account of the use of methanol.

**(6) Key assumptions/parameters (including emission factors and activity levels) and data sources:**

>>

- The plantation does not displace any proposed forestry programme, nor does it result in deforestation.
- The Bio-fuel produced by the plant shall be consumed as to displace fossil fuel based liquid fuels - Reservations can be expressed regarding this as there could be normal loss of the product on account of pilferage, spillage, damage etc. This aspect needs to be looked into. Possibility of exports to an Annex 1 country too needs to be addressed suitably.
- The use of bio fuels / diesel is completely voluntary.
- Bio diesel, without incentives (CER, tax breaks etc) is not an economically attractive fuel - this is problematic as this may be the current scenario but in view of the increasing crude prices, the prevailing trading price of the emissions reduction credits (of EU origin) and the penalty for non compliance under the EU ETS, this may not always hold true, as export markets could become economically attractive. The methodology should build a detailed scenario analysis, clearly stating the end (delivered to customer) cost of the Bio-diesel, in order to enable an assessment of the various price sensitive issues involved.
- Impact on the efficiency / delivery of service per unit of fuel, on account of the fuel switch can be easily computed - This is problematic as the document does not explain how the relevant data is going to be collected accurately.
- GHG emissions on account of the use of methanol / other chemicals during the production process is not relevant - this may not be the case and it may be desirable to look at GHG emissions from each and every step / component of the value chain.

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

>> Yes, the key assumptions are arrived at in a transparent manner.

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

>> See section 6.a) above where reservations regarding adequacy have been joined to the presentation of the assumptions for sake of clarity.

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

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- N<sub>2</sub>O related data (related to use of synthetic fertilizer in the plantations)- Source IPCC;
- Emission factor for the grid - local / national statistics provided by the power company;
- LCA adjusted emission factor for the fossil fuel displaced or used - sourced from the fuel supplier, if not available - IPCC default factors;
- Fuel efficiency of the bio-fuel - for the principal usage mode, adjustment factor shall be assessed by using scientific literature or reports.

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

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

*f) State possible data gaps:*

>>

- Potential GHG emissions on account of usage of other chemicals (e.g. methanol) during the



<p>manufacturing process.</p> <ul style="list-style-type: none"> <li>• Impact on the Fuel Efficiency / performance of the engine and its impact on net GHG emissions per unit of service delivered needs to be revisited and this could pose a problem.</li> <li>• GHG emissions on account of the wastewater / effluent treatment at the project site needs to be looked into and if significant, accounted for.</li> </ul>
<p><b>(7) Assessment of uncertainties:</b></p> <p><i>a) State whether the methodology includes an assessment of uncertainties regarding:</i></p> <p><i>i) The basis for determining the baseline scenario:</i>  &gt;&gt; Yes, the amount of biomass sold, and the related emission factor for fossil fuel displaced.</p> <p><i>ii) Algorithms/formulae:</i>  &gt;&gt; Not specifically.</p> <p><i>iii) Key assumptions:</i>  &gt;&gt; Not specifically.</p> <p><i>iv) Data:</i>  &gt;&gt; For some data.</p> <p><i>b) State whether the uncertainties presented are reasonable:</i>  &gt;&gt; Yes. However, section D.5 refers to "the uncertainty range of emission reductions", in order to assess whether certain items in the project boundaries can be considered "negligible". The methodology does not provide further information on how to assess this range. This could be included to make it more complete</p>
<p><b>(8) Leakage:</b></p> <p><i>a) State how the baseline methodology addresses any potential leakage due to the project activity:</i>  &gt;&gt; Potential leakage is computed as under:  Leakage = [electricity consumed by the project x Carbon Emission factor of the grid (adjusted for transmission losses)] - [N<sub>2</sub>O emissions reduced due to a switch from Synthetic fertilizers to bio fertilizers produced as a by product by the project] + [ GHG emissions on account of the use of synthetic fertilizer at the plantation site] + [ Indirect GHG emissions on account of the feedstock used at the bio-fuel production site] + [ Indirect GHG emissions on account of the production of the synthetic fertilizer used].</p> <p><i>b) Indicate whether the treatment for leakage is appropriate and adequate:</i>  &gt;&gt; The treatment for leakages is generally appropriate and adequate. However, it may be desirable to look at leakages:</p> <ul style="list-style-type: none"> <li>• On account of the use of methanol (and / or other chemicals) during the manufacturing process;</li> <li>• Impact on GHG emissions due to changes in the efficiency on account of the use of bio diesel;</li> <li>• Possible exports of the bio fuels to an annex 1 country.</li> </ul> <p>Regarding the latter the possibility of leakage on account of exports to an Annex 1 country has not been suitably addressed. It should be pointed out that with increasing demand (and thus price) of bio diesel in the Annex 1 countries, the possibility of exports to Annex 1 countries should not be discarded without justification.</p> <p>Another key issue would be to ensure that the bio diesel sold has been actually used for the intended purpose. Issues like the destruction of the bio-fuel after its expiry period without accounting it as a leakage, loss on account of pilferage, spills etc. after the point of sale needs to be looked at and if deemed significant, this needs to be suitably addressed.</p>
<p><b>(9) Transparency and "conservativeness":</b></p> <p><i>a) Indicate whether the baseline methodology was developed in a transparent way:</i></p>

>> Regarding the formulae to calculate baseline emissions, project emissions and emissions reduction, the answer is yes. However regarding applicability conditions, baseline scenario determination and additionality, the answer is no, while the three parts structure (biomass supply, bio-fuel production, bio-fuel consumption) is clear and transparent, sections A.3 (conditions under which the methodology is applicable to CDM project activities) and D.1 (how the methodology determines the baseline scenario) are rather long and confused. As a result the methodology cannot be considered as been developed in a transparent way.

*b) State whether the baseline methodology is conservative:*

>> The baseline is generally conservative, with the reservations expressed above regarding the baseline scenario determination and the additionality.

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

>>

Strengths:

The approach of splitting the whole bio fuel value chain into three key components and then analysing each component is very appropriate and relevant to the project category. It is quite evident that significant efforts have been put in to establish and ensure environmental integrity. The document touches upon a host of issues in great depth and its use of the Life-Cycle- Assessment for computing leakages is very interesting.

Weaknesses:

- There is scope for improving the quality of the drafting. In its current form it tends to get difficult to follow, especially Section A.3 and D.1. As a consequence, it is difficult to check if there are no inconsistencies. To clarify things, it may also be desirable to provide a decision tree and explanations for the short forms / acronyms used.
- Financial analysis : though the draft CDM-PDD does mention that the financial details are enclosed, it was not possible to locate it. In the absence of relevant details on the underlying assumptions used, it is difficult, if not impossible to comment on the validity of the financial analysis and results. Details of critical assumptions e.g. projected selling price of the bio diesel, details regarding the impact of CDM registration on the projects viability, cost of the project activity, capital structure and the cost of funds etc. should be required by the methodology.
- In addition as "cost" is considered to be the largest barrier, details should be provided and /or required outlining the selling price at which the Bio-diesel produced becomes economically viable. This would help to establish the point of inflexion, i.e. the price point of petro-diesel above which the bio-diesel becomes economically attractive (all things remaining constant) and thus perhaps the baseline scenario.
- The methodology does provide for the use of an "Adjustment factor related to the difference of fuel efficiency for km drive per GJ", I am unable to visualise how the relevant data is to be generated accurately. This should be explained in greater details in the draft CDM-PDD as it could play a key role in determining the actual GHG emissions reduction on account of the use of bio-diesel produced.
- Some other GHG emissions on account of usage of other chemicals (e.g. methanol) during the manufacturing process and the waste water / effluent treatment at the project site needs to be looked into and if significant, accounted for.

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

>> The methodology examines the impact of local regulations in depth under the following circumstances:

- No regulations;
- Subsidies or tax incentives to promote the bio fuel or other compatible biomass based fuel;
- Non-mandatory or non-effective regulations to promote the bio-fuel or other compatible biomass based fuels;
- Mandatory or virtually mandatory regulations (targeting the fuel seller) to penetrate the bio fuel or other compatible biomass based fuels by setting a quantified threshold; or
- Mandatory of virtually mandatory regulation (targeting the seller or consumer) which exclude the use of fossil fuel and mandate the use of pure biomass-based fuel use.

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

>>

- Project type: This methodology is applicable to projects that involve a voluntary partial / complete substitution of liquid fossil fuel with bio-diesel in the transport sector.
- Region: The methodology should be relevant and applicable to regions across the world, provided the country does not have local legislations requiring a mandatory shift to bio-diesel / fuel.
- Others:
  - The entire production volume is consumed in the country of origin / another non-annex 1 country with similar regulatory and operating environment. There is no incidence of 'leakage' to a non-similar country.
  - The project activity should not result in reducing the forest cover nor should it prevent afforestation / reforestation efforts.

**(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:

>> It may be desirable for the project developer to focus on the type of on hand instead of trying to develop a general bio-fuel methodology, as it will be simpler to conceptualise and explain.

**II. Proposed new monitoring methodology (specify title here):** >> Generalised monitoring methodology for transportation bio-fuel production with LCA.

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

**(1) Brief description of new methodology:**

*Describe new methodology:*

>> The proposed methodology is applicable to the project activity which produces a biomass-based transportation fuel. The methodology proposes to monitor each step in the bio-fuel manufacturing value chain for both the baseline and the project scenario. However, emissions at the bio-fuel consumption stage are monitored at the supply point (i.e. output of the Bio-fuel production stage).

Characteristic feature of the methodology is to include Life Cycle Analysis. Thus, despite the fact that main component of the project is the second stage (i.e. the bio diesel production site), a lot of activities are monitored at the first stage (Plantation related).

**(2) Key assumptions/parameters:**

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

>>

- Monitoring of emissions at the bio-fuel consumption stage can be achieved by monitoring the supply point (i.e. output point of the bio fuel production stage): This is problematic as it does not account for pilferage, spills, damaged stock, exports to Annex 1 countries etc.
- Sale of bio-fertiliser (if any) is equal to its usage and a corresponding reduction in the application of synthetic fertiliser and thus N<sub>2</sub>O emissions - This is problematic as sale cannot be assumed to be equivalent to usage. If the methodology is to claim credits for production of bio fertilisers and its use in replacing synthetic fertilisers, it needs to put in place a methodology to actually monitor end use of the bio fertiliser.
- Impact of changes in engine efficiency is negligible - this is problematic as it may well be the case in the modern engines that is referred to in the draft CDM-PDD, but is it also applicable to the engines in use in the target market, is a question that needs to be answered.

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

>> Yes the assumptions are arrived at in a transparent manner.

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

>> Whereas most of the assumptions are generally adequate, the ones listed above (in 2a) deserve a serious re examination.

### **(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):*

>>

- Electricity used by the project - source: project operation records;
- Grid emission factor - source: Official statistics;
- Petro diesel consumed for off-site transport - source: project operation records/ third party data;
- Emission factor for fossil fuel used on site - National data / IPCC emission factor, LCA;
- Fossil fuel used for plantation related activity - fuel bills / receipts;
- N<sub>2</sub>O emission due to use of synthetic fertilizers: receipts / weight meter of the fertilizer received and used;
- Bio fuel consumed - derived from the quantity of bio fuel sold -source: sales records.

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

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

*c) State possible data gaps:*

>> Bio fuel sold may not be equal to the bio fuel consumed.

The baseline methodology imposes as an applicability condition that there is an excess of supply of fossil fuel (condition f (v) p. 4). But the methodology doesn't provide any way to ensure that this condition is verified at the beginning and during the crediting period.

**(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:

>> Since the monitoring methodology reproduces the same text than the one of the confusing sections A3 and D1 of the baseline methodology, the same failure in the presentation apply.

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):

>> Subject to issues raised elsewhere in this report, the proposed methodology is generally appropriate.

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

>> The proposed monitoring methodology is generally compatible.

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

>> Possible leakage on account of diversion of the bio fuel after the point in sale (that is monitored) needs to be looked into.

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

>>

- Electricity used by the project activity: monitored using calibrated, energy meters installed within the premises. Electricity bills will be regularly verified.
- Grid Emission factor: Source: power company, based on national / local statistics.
- Fossil fuel consumed at the project site: fuel purchase records
- Bio-fuel sold or utilized: Weight meter, cross checked with sales records.
- Petro diesel consumed for off site transport: Project proponents will maintain a record of the petro diesel purchased for the vehicles used for transportation. Bills & amounts paid towards the purchase of the petro diesel will be verified. - In my opinion the QA /QC needs to be strengthened by cross checking the actual consumption of petro diesel with the theoretical based on approximate distances traveled.
- CO<sub>2</sub> emission factor for petro diesel: based on national data / official statistics or IPCC emission factors adjusted for LCA.
- Plantation related emissions: monitoring of fossil fuel used, synthetic fertilizers used etc.
- Bio fertilizer sold: weight meter, cross-checked with sale records.

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


>>

Strength:

- The methodology is simple and easy to implement.

Weaknesses:

- Description of the system for monitoring the actual quantity of bio fuel produced is missing. This, in my opinion is a key data.
- Lack of suitable provisions to monitor the actual quantity of bio diesel consumed (and the resultant replacement of petro-diesel for a given level of service delivery). As the CER computation is based on the bio diesel actually consumed (and the corresponding net reduction in consumption of petro diesel for a similar level of service delivery), this is a key factor to ensure the environmental integrity of the methodology.
- Absence of suitable provisions to monitor increase (if any) in the consumption of petro diesel, on account of blending bio-diesel. It should be pointed out that the draft CDM-PDD refers to modern

<p>engines and the fact that there is negligible difference in the fuel efficiency. Whether this is also true for the engine mix in the target market needs to be addressed.</p> <ul style="list-style-type: none"> <li>• Lack of suitable provisions to monitor and account for possible 'leakages' of the bio diesel on account of sale by the distributor to a third party for exports to an Annex 1 Party.</li> <li>• Leakages on account of destruction of 'expired' bio diesel stock (in its unblended form) by the distributor / retailer needs to be monitored effectively. The incentive for doing this is evident.</li> </ul>									
<p><b>(8) Applicability of the proposed methodology across project types and regions (please indicate):</b></p> <p>&gt;&gt;</p> <ul style="list-style-type: none"> <li>• <b>Project Type:</b> This methodology is applicable to projects that involve a voluntary partial / complete substitution of liquid fossil fuel with bio diesel in the transport sector.</li> <li>• <b>Region:</b> The methodology should be relevant &amp; applicable to regions across the world, provided the country does not have local legislations requiring a mandatory shift to bio-diesel / fuel.</li> <li>• <b>Others:</b> <ul style="list-style-type: none"> <li>• The entire production volume is consumed in the country of origin / another non annex 1 country with similar regulatory and operating environment. There is no incidence of 'leakage' to a non similar country.</li> <li>• The project should not result in reducing the forest cover nor should it prevent afforestation / reforestation efforts</li> </ul> </li> </ul>									
<p><b>(9) Any other comments:</b></p> <p>a) State whether any other source of information (i.e. other than documentation on this proposed methodology available on the UNFCCC CDM web site) has been used by you in evaluating this methodology. If so, please provide specific references:</p> <p>&gt;&gt; None.</p> <p>b) Indicate any further comments:</p> <p>&gt;&gt; No further comments.</p>									
<div style="text-align: center;">  </div> <p>Signature of Meth Panel Chair .....</p> <p>Date: 22/06/2005 <span style="float: right;">Jean-Jacques Becker</span></p> <p>Signature of Meth Panel Vice-Chair .....</p> <p>Date: 22/06/2005 <span style="float: right;">(name)</span></p>									
<p><b>Information to be completed by the secretariat</b></p> <table border="1"> <tr> <td>F-CDM-NMmp doc id number</td> <td>F-CDM-NMmp-NM0109</td> </tr> <tr> <td>Date when the form was received at UNFCCC secretariat</td> <td>22 June 2005</td> </tr> <tr> <td>Date of transmission to the EB</td> <td>22 June 2005</td> </tr> <tr> <td>Date of posting in the UNFCCC CDM web site</td> <td>22 June 2005</td> </tr> </table>		F-CDM-NMmp doc id number	F-CDM-NMmp-NM0109	Date when the form was received at UNFCCC secretariat	22 June 2005	Date of transmission to the EB	22 June 2005	Date of posting in the UNFCCC CDM web site	22 June 2005
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