

 <p style="text-align: center;">CDM: Proposed New Methodology Meth Panel recommendation to the Executive Board (version 04) <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:	6 – 9 September 2005
Related F-CDM-NM document ID number (electronically available to EB members)	F-CDM-NM0108: “Biodiesel production and switching fossil fuels from petro-diesel to biodiesel in transport sector - 30 TPD Biodiesel CDM Project in Andhra Pradesh, India”
Related F-CDM-NMex document ID number(s) (electronically available to EB members)	F-CDM-NMex0108: Mawandia / Gruetter
Related F-CDM-NMpu document ID number(s) (electronically available to EB members)	F-CDM-NMpu0108: 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>	
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:>> Biodiesel production and switching fossil fuels from petro-diesel to biodiesel in the transport sector.	
<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>>></p> <p>ii. Minor changes:</p> <p>>></p>	
<p>b. To reconsider this proposed methodology, subject to required changes</p> <p><input checked="" 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>>> The applicability conditions will depend on how the methodology is further elaborated (e.g. whether the use of N-fertilizers is excluded, etc). The following indicative applicability conditions may apply:</p> <ul style="list-style-type: none"> • Project activities that generate biodiesel, which is used for road transportation; • The project activity uses only renewable biomass sources for the generation of biodiesel; • The host country has no regulation in place which requires the use of biodiesel; • In order to ensure that there is no double counting of emission reductions the project participants 	

need to demonstrate that no CERs are claimed for downstream reductions.

ii. Required changes:

>> This methodology is a resubmission of NM0069 “30 TPD Bio-diesel Project in Andhra Pradesh, India” which was previously graded as C. After a preliminary recommendation (B), project participants have prepared clarifications. These clarifications address some issues but a number of requested changes have not been addressed. Moreover, the changes made have brought forward other issues that need resolving. The main reasons for non-approval are the following:

- Lack of appropriate methodological approaches to account decreases of carbon pools.
A consistent methodological approach to reflect decreases of carbon pools as a result of the project activity is lacking. Firstly, as also outlined in the review of NM0069, the approach to consider CO₂ emissions from land clearance is methodologically not sufficient. Secondly, the methodology should assess whether the project activity involves any significant decreases of carbon pools on land areas outside the project boundary, e.g. due to deforestation as a result of land pressure due to the project activity. These emissions should be either accounted (see guidance by EB20) or it should be ensured that they do not occur.
- Important emission sources are neglected.
Important emission sources in the biodiesel production process are neglected. This refers in particular to emissions from the use of N-fertilizer for the cultivation of soils, which is regarded by most Life Cycle Assessments as the most important emission source. Potential anaerobic treatment of co- or by-products during biodiesel generation is not taken into account. Furthermore, - although not noted in the preliminary recommendation - the fraction of fossilized carbon in biodiesel due to the reaction with the methanol in the esterification process should be taken into account. Conversely, the Meth Panel also notes that a number a minor emission sources are considered, which could potentially be neglected in order to reduce transaction costs.
- Identification of the baseline scenario.
While the generic approach to identify the baseline scenario (economically most attractive course of action) appears appropriate, the procedures still needs revision and further elaboration. It is not sufficiently clear how the economically most attractive option is determined.
These issues and a number of further issues are explained in more detail below.

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

c. Not to approve the proposed methodology



i. Reasons for non-approval:

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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: >> Bio-diesel production and switching fossil fuels from petro-diesel to bio-diesel in the transport sector.

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):

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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.):

>> See baseline methodology

ii. Required changes:

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- Recommendations from the previous review have mostly not yet been taken into account. Changes to the baseline methodology (e.g. to indicate that the baseline fuel may not be petro-diesel) have mostly not been reflected in the monitoring methodology, making it partly inconsistent with the baseline methodology. The main methodological deficits result from the lacks of the baseline methodology (inappropriate approach towards changes of carbon pools, neglecting of important emission sources).
- The monitoring methodology shall provide for measures to ensure that there will be no exports without limiting the applicability of the baseline and monitoring methodologies to the first plant that produces biodiesel in the host countries (other CDM project activities that produce biodiesel would need to use a different methodology).

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

c. Not to approve the proposed methodology

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i. Reasons for non-approval:

>> Recommendations from the previous review have mostly not yet been taken into account. Changes to the baseline methodology (e.g. to indicate that the baseline fuel may not be petro-diesel) have mostly not been reflected in the monitoring methodology, making it partly inconsistent with the baseline methodology. The main methodological deficits result from the lacks of the baseline methodology (inappropriate approach towards changes of carbon pools, neglecting of important emission sources).

(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*):** >> [Bio-diesel production and switching fossil fuels from petro-diesel to bio-diesel in the transport sector.](#)**(1) Short description of the methodology, including an assessment of which approach from paragraph 48 of the CDM modalities and procedures was used:***a) Describe the methodology:*

>> The methodology is developed for fuel-switch activities that partially or fully substitute biodiesel by fossil fuels in road transportation. The baseline scenario is the use of one type of fossil fuel instead of biodiesel. This “baseline fuel type” is the fuel that involves the lowest discounted costs for the vehicle owners, based on current fuel prices. Additionality is assessed using the “Tool for the demonstration and assessment of additionality”. Baseline emissions include CO₂, N₂O and CH₄ and are calculated based on the quantity of actual biodiesel sold, taking into account the difference in motor efficiencies for biodiesel and the “baseline fuel”. Project emissions include CO₂ emissions from electricity and fossil fuel consumption used for biodiesel production (it is not defined precisely what comprises production), CO₂, N₂O and CH₄ emissions from transportation of raw vegetable oils to the project plant and transportation of biodiesel to filling stations, CO₂ emissions from clearance of vegetation (fossil fuels and decreases of biomass stocks). Leakage emissions comprise CO₂ emissions from harvesting of the plantations (not very clearly described) and fugitive methane emissions during the production of methanol which is used as feedstock.

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:

>> This is an appropriate approach as the project is a fuel-switch project.

(2) Basis for determining the baseline scenario:*a) State whether the documentation explains how the baseline scenario is to be chosen and identified:*

>> In principle, yes. (Problems are described below.)

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

>> The underlying rationale for the identification of the baseline scenario is to answer the question what the petro diesel vehicle owners would do in the absence of the proposed project. The economically most attractive fuel type is considered to be substituted by the biodiesel.

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 indicates that the “Tool for the demonstration and assessment of additionality” should be used to assess additionality.

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

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Baseline scenario determination:

Taking into account previous reviews, the procedure to identify the baseline scenario has been revised. The starting point for the determination of the baseline scenario is what would happen to the petrodiesel that is supposed to be replaced by the biodiesel as part of the project activity. The potential baseline scenarios include the options that either

- i) The petro-diesel would be fully replaced by the biodiesel (=project activity without CDM)
- ii) The petro-diesel would be continued to be used
- iii) The petro-diesel would be replaced by one specific other fossil fuel type (CNG, LNG, LPG).

This approach involves still several problems:

- It is unclear why the starting point of the baseline scenario determination is the identification of one specific fuel type. While option (a) and (b) may be reasonable, it appears quite unlikely and constructed that in the absence of the project activity the full quantity of petro-diesel would be replaced by one specific fuel type. In practice, it appears more likely that the biodiesel would either substitute purely petro-diesel or a mix of different other fuels (where petrodiesel may have the largest share). The latter case may occur, as e.g. the introduction of biodiesel may influence the decision making for the purchase of vehicles. However, the Meth Panel also notes, as in the previous review, that if the methodology would be limited to biodiesel blends / types that do not need any modification of vehicles to use it, it may be appropriate to consider only options (a) or (b) as possible baseline scenarios.
- The methodology suggests identifying a “baseline fuel” by determining the economically most attractive course of action for vehicle owners. This appears in principle appropriate. However, a price comparison, as suggested, would need to be further elaborated, at least, if other fuels than petro-diesel and biodiesel are being considered, since in this case the market price is only one influence factor next to many others (vehicle prices are considerably different for different fuels). This includes, for example, also relevant information on the “efficiency multiplier of petro-diesel”, which would be needed for different fuel types. Furthermore, if biodiesel is not used so far in the country, a market price for biodiesel is not available and the proposed comparison with the price of other fuels is not possible. Hence, a hypothetical price of biodiesel without the CDM would need to be compared with the price for petro-diesel. If PPs want to follow this approach, this should be clarified and guidance should be provided on how to determine the hypothetical price for biodiesel.
- The price level considered for the determination of the baseline scenario should be further specified: “At the time of the draft CDM-PDD development” may be replaced by a more specific time period (e.g. three historical year) or internationally recognised projections for the future development of oil prices may be used (e.g. IEA, Worldbank, USDOE). The consideration of likely national policies with respect to fuel prices appears somewhat arbitrary and difficult to validate. It is suggested to consider only adopted policies.

Additionality:

Using the additionality tool to assess additionality is appropriate. However, the methodology could also benefit from further guidance e.g. as to relevant barriers.

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

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

>> Yes, in general the methodology is clearly-written and concise. There are a number of minor issues which should be clarified:

- Further elaboration of the selection of the most likely baseline scenario (see details above).
- It should be clarified whether the methodology applies to blends of fuels or only to pure biodiesel. This should also be respectively taken into account in calculating emission reductions.
- Under the project boundary, the gases considered should be clearly described. Furthermore, it is not very clear and consistent which steps of biodiesel production are actually included in the project boundary. For example, in section D.5 it is stated that the “oil extraction is located outside the project boundary”, while the calculation of project emissions in section D.7 specifically includes emissions from “oil extraction activities”. A clear graphical illustration of the process steps in producing biodiesel with a demonstration of the project boundary could be helpful.
- The applicability conditions explain that the methodology should be applicable to road and rail

transport. However, equations to calculate emissions reductions and explanations only refer to road transportation by vehicles.

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):

>> With revisions as suggested, the proposed methodology could be used for the referred proposed project.

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, probably not.

Please explain:

>> Firstly, the procedure to identify the most likely baseline scenario needs further elaboration, as explained in detail above. Secondly, there are a number of more general methodological issues that are not appropriately addressed and that need further elaboration to represent real emission reductions. These aspects are explained in more detail in other sections. The most important issues are

- The consideration of leakage due to decreases in carbon pools;
- The consideration of emissions associated with the use of N-fertilizers and potential anaerobic treatment of biomass residues or co-products;
- The calculation of emission resulting from the use of methanol;
- The calculation of emissions from clearance of land areas.

(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):

>> Yes, for bio-diesel in general substituting petro-diesel. However, a number of issues are not yet sufficiently addressed in the methodology.

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

>> The scope used is bio-diesel production plant, transport of bio-diesel and feedstocks, use of bio-diesel in vehicles plus preparation and harvesting of the relevant land areas.

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 corresponds to the year of production of the biodiesel and the time that fuel-switch occurs. IPCC emission factors (where used) are sourced from the revised 1966 IPCC guidelines.

(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

>> Section D5 does not explicitly indicate which gases are included (but should do so). From the rest of the documentation, it would appear that the following are included in the project boundary:

- CO₂, CH₄ and N₂O from petro-diesel;
- CO₂, CH₄ and N₂O from fossil fuel consumed in the biodiesel plant;
- CO₂ from electricity consumption;
- CO₂ from off-site transport emissions (biodiesel transport), it is also implied that CH₄ and N₂O from this source are also accounted for, if data is available.
- CO₂ emissions from vegetation clearance prior to the project implementation

- Fugitive CH₄ emissions from methanol production are included in leakage assessments.
- CO₂ emissions from harvesting (devegetation) of the seed-bearing plants are included as leakage emissions.

ii) Physical delineation

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- The bio diesel production plant site
- Transportation of the bio diesel and the feed stock
- Combustion sources or vehicles that substitute petro-diesel with bio diesel.
- The preparation / harvesting of oil bearing seeds from new plantations.

b) Indicate whether this project boundary is appropriate:

>> In response to the previous review, project participants have clarified that only CO₂ emissions from devegetation prior to the project implementation are accounted. Potential removals of gases are not accounted. This is appropriate.

The following issues are problematic and need further revision:

- It is not clear why CO₂ emissions from harvesting of seed-bearing plants have been included after the last review as leakage emissions. Accounting of this emission source does not make sense, since these plantations are only grown due to the project activity and would not grow in the absence of the project activity. Harvesting of the plants does therefore not result in net emissions. Apart from that, accounting of this emission source would likely result in negative overall emission reductions.
- As already mentioned in the previous review, it is not appropriate to neglect CH₄ and N₂O emissions as a result of the plantations. In particular, direct and indirect N₂O emissions from the cultivation of soils due to the use of N-fertilizers may be a very significant emission source: Life Cycle Assessments for biodiesel indicate that N₂O emissions due to the use of N-fertilizer are by far the most important emissions source in the biodiesel production chain (Elsayed 2003). CH₄ emissions may be significant where the biomass or its residues are treated anaerobically. Appropriate methodological approach to consider these emission sources should be developed. Alternatively, project participants may limit the applicability conditions to ensure that these emissions do not occur. For example, applicability conditions could include a provision that no N-fertilizer may be used for the plantations and that the biomass may not be stored or treated in ways that allow for anaerobic decomposition of the biomass (e.g. no long-term storage on piles, etc).
- A further issue is the treatment of methanol or ethanol (this was not yet raised in the previous review): The use of methanol or ethanol in the esterification process may involve rather significant upstream emissions (see for example Elsayed 2003). Usually, methanol is produced by natural gas, a fossil fuel. In this case, the carbon in the methanol is from a fossil resource. During the process of esterification, the carbon in the methanol is included in the ester. Thus, a fraction of the carbon in biodiesel is generated from a fossil fuel. (This effect can be estimated on a molecular basis with 44/32 t CO₂ emissions per t methanol used in the esterification process). In addition, upstream emissions are associated with the production of methanol (of which fugitive CH₄ emissions during production are only a minor source). Since this emission source is rather significant and attributable to the project activity, project participants should take this into account.
- It is not consistent that CH₄ and N₂O emissions from petro-diesel combustion are considered in the baseline scenario but that CH₄ and N₂O emissions from combustion of biodiesel in the project scenario are excluded. This may potentially involve an overestimation of emission reductions. A reasonable simplification may be to neglect this emission source.

The Meth Panel would like to note that project participants may wish to neglect some relatively minor emission sources in order to reduce transaction costs, such as

- CH₄ and N₂O emissions from fossil fuels consumed in the biodiesel production plant;

- CH₄ and N₂O emissions from transportation of raw oils and biodiesel;
- CO₂ emissions from transportation of raw oils and biodiesel if the distances are reasonable (e.g. threshold values could be proposed), taking into account that also petro-diesel or other fossil fuels would need to be transported and processed;
- CO₂ emissions from fossil fuels used for the preparation of the land areas or the cultivation of lands.
- CH₄ emissions occurring directly during methanol production (quite insignificant).

(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:

>>

Implicit assumptions:

- Amount of biodiesel sold by “retailers” = amount of biodiesel consumed in transport (this is problematic as the NM does not specify whether biodiesel is blended with petro-diesel before being transported to retailers).
- Amount of biodiesel consumed all occurs in the host country (and not in Annex I countries) – the location of retailers needs to be noted in order for this assumption to be appropriate.
- The baseline fuel does not change over the course of the crediting period. This would need to be reassessed at a minimum at the renewal of a crediting period.
- The use of methanol for esterification does not involve significant upstream fossil fuel emissions. This is problematic, since methanol is in most cases reformed from natural gas.
- In the absence of the project activity, carbon pools on the land area would not significantly increase. This implicit assumption is problematic, since it may not always be the case, for example, in case where abandoned land areas are used for oil production, in the absence of the project activity, revegetation may occur. Project participants should provide better justification for this assumption.

Explicit assumptions:

- CERs will not be claimed by users of biodiesel. This could potentially be problematic if further CDM project activities that produce the same type of biofuel are developed in the host country.
- The efficiency multiplier to account for any differences between biodiesel combustion and combustion of the “baseline fuel” is set at 0.88. This is problematic, since in practice this multiplier will depend on the baseline fuel type and may also vary with the quality of the biodiesel. A proper justification for this value is not provided.
- Emissions from the plantation-related activity are limited to the clearing and plantation process. Highly problematic, as the use of N-fertilizer may involve considerable N₂O emissions (both direct and upstream) and as the disposal of the cleared biomass could result in significant GHG emissions.
- Harvesting of oil seeds involves no fuel use. It may be appropriate to neglect any smaller fuel consumption during harvesting.

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

>> No.

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

>> See a) above.

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

>> Data is obtained from project activity reports (quantity of biodiesel produced), actual invoices (sale of biodiesel, transportation of seeds and biodiesel), national/official statistics, the GHG inventory of the

country, literature, or the revised 1996 IPCC guidelines.

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

>> Most sources of data are adequate. There are a few deficits that need further elaboration:

- Default emission factors from industrialized countries are not necessarily conservative and appropriate for developing countries (see also explanations in section 9).
- The methodology suggests collecting the emission factor from “vegetation clearance” from the national GHG inventory of the country. This will in most cases not be feasible, since GHG inventory data is from non-Annex I countries is for many countries only available for the single year 1994 and since the national GHG inventory usually only contains rather aggregated information and does not provide direct information on carbon pools of single areas. Therefore, a different methodological approach is required to determine any losses or carbon pools due to clearance of existing vegetation. Project participants are encouraged to make use of tools and approaches developed and discussed by the WGAR, e.g. for small-scale project activities.

f) *State possible data gaps:*

- “Efficiency multipliers” for different baseline fuels and blends of biodiesel with petro-diesel are lacking. The efficiency change should be based either on using 100% bio-diesel or using a specified blend and determining the efficiency multiplier based on the blend (efficiency change/percentage blend).
- Data needed to estimate potential N₂O emissions from use of N-fertilizer and CH₄ emissions from anaerobic treatment of biomass products or residues.

(7) Assessment of uncertainties:

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

i) *The basis for determining the baseline scenario:*

>> No.

ii) *Algorithms/formulae:*

>> No.

iii) *Key assumptions:*

>> Some (e.g. emission factors) but not others (e.g. efficiency factor).

iv) *Data:*

>> Yes.

b) *State whether the uncertainties presented are reasonable:*

>> The following should be addressed:

- Uncertainty in determining the baseline scenario;
- Uncertainties of the efficiency multipliers for different fuels
- Uncertainty of important sources of indirect emissions associated with the cultivation of land (N-fertilizer, anaerobic treatment of biomass).

(8) Leakage:

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

>> Leakage due to increased demand of methanol is inclu

The estimation of leakage emissions comprises two emission sources:

- Methane emissions from upstream methanol production;
- CO₂ emissions from harvesting of oil-bearing seeds (devegetation).

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

>> The treatment of leakage is not appropriate, for the following reasons:

- Methane emissions occurring directly at the methanol production are relatively marginal and may be neglected. However, other sources of emissions in the production of methanol are quite significant if the methanol is from fossil fuel sources. This should be considered (see further explanations under (5) above).
- The consideration of CO₂ emissions from harvesting of oil-bearing seeds (devegetation) does not make sense, as the plants are only grown due to the project activity. Furthermore, the methodological approach would be inappropriate, as it is not sufficiently clear how emission reductions would be determined (which carbon pools accounted, which emission factors used, etc)
- A major deficit of the proposed methodology is that a consistent methodological approach to reflect any indirect decreases of carbon pools as a result of the project activity is lacking. The methodology should assess whether the project activity involves any significant decreases of carbon pools on land areas outside the project boundary, e.g. due to deforestation as a result of land pressure due to the project activity. These emissions should be either accounted (see guidance by EB20) or it should be ensured that they do not occur.

(9) Transparency and “conservativeness”:

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

>> The selection of the baseline is not transparent. The following procedure to determine baseline emissions is transparent, although there are some data gaps (see above). The procedure to determine project emissions is transparent, with the exception of emissions arising from oil-seed production (the criteria is not clear for what is included and what not). The definition of leakage is transparent.

b) State whether the baseline methodology is conservative:

>> No, because of: uncertainties as to the appropriateness of the baseline scenario; lack of clarity about the blending or otherwise of bio-diesel and its effect on efficiency levels; understated project emissions because of omitting N₂O and CH₄ emissions in the baseline scenario; accounting CH₄ and N₂O emissions from the baseline fuel but not from biodiesel combustion.

The methodology is conservative in estimating emissions for transport of biodiesel but for transport of the baseline fuel and in not accounting for any emission credits from the use of co-products of biodiesel generation.

The methodology suggests using default emission factors from industrialized countries for road transportation, assuming that they are more conservative. However, industrialized country emission factors are not necessarily conservative. For example, N₂O emission factors for gasoline are usually higher for industrialized countries, since catalytic converters are used more broadly. CO₂ emission factors depend on the fuel characteristics and are not systematically lower in industrialized countries.

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

>>

Strengths:

- Simple and
- Straightforward.

Weaknesses:

- The baseline scenario determination needs revision;
- The methodology does not ensure that carbon pools do not decrease on other land areas as a result of the project activity;
- Some parameters are non-transparent and/or non-conservative (see sections above);
- Some methodological approaches are insufficient and need substantial further implementation;
- Important emission sources are neglected (N₂O emissions from oilseed production), while relatively insignificant emission sources are taken into account;
- Potential double-counting of CERs from production/use of bio-diesel;
- Potential use of bio-diesel in non-transport uses.
- Others outlined above.

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

>> Determination of the baseline scenario includes an assessment of national policies (although in a too stringent manner: “in case ... national ... policies make the bio-diesel production and use is the only alternative...” It should be better explained how national and/or sectoral policies are taken into account in the selection of the baseline scenario and the calculation of emission reductions

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

>> This methodology, once revised, should be broadly applicable across countries 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:

>> Documentation relative to NM0069 “30 TPD Bio-diesel Project in Andhra Pradesh, India” and its assessment by the Meth Panel;

Elsayed, Matthews, Mortimer (2003): Carbon and energy balances for a range of biofuel options;
CONCAWE, EUCAR, JRD/IES (2003): Well-to-Wheels analysis of future automotive fuels and powertrains in the European context;

GEMIS 4.2: <http://www.oeko.de/service/gemis/de/index.htm> published in 2005

b) Indicate any further comments:

>> The applicability conditions cannot include the requirement that “the bio-diesel plant developer owns the CERs”: the host country may have some requirements on CER-sharing.

II. Proposed new monitoring methodology (specify title here): >> Bio-diesel production and switching fossil fuels from petro-diesel to bio-diesel in the transport sector.

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:

>> Baseline emissions in transport depend on many parameters such as technology level, fuel consumed, emission controls, operating characteristics, age of engines etc. The proposed methodology states that monitoring these emissions is difficult and complex. Thus, it uses a common emission factor based on the national data or IPCC emission factors, and monitors electricity consumption, petro-diesel and other fossil fuel use to calculate GHG emissions from bio-diesel production. The methodology also estimates CO₂ emissions from land clearance prior to implementation of the project activity.

Project emissions are based on the production of bio-diesel, partially emissions caused by the production of oil-seeds, and transport emissions to/from the bio-diesel plant. Most data used is proprietary, or from national sources/IPCC. The project also monitors sales of bio-diesel.

Apparently, some changes to the baseline methodology after the last review have not been reflected in the monitoring methodology.

(2) Key assumptions/parameters:

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

>>

- CERs from bio-diesel consumption will not be claimed by bio-diesel users or distributors. Problematic, as no monitoring of this assumption is made.
- Quantity of bio-diesel produced (should be “sold”) = quantity of petro-diesel substituted. This is problematic as it does not account for theft, wastage etc (this point was also raised in the review of NM0069, and in the preliminary recommendation on NM0108).
- All bio-diesel is consumed in the host (or other non-Annex I) country. This should be corrected, e.g. by asking for a list of retailers and the country in which they are located.
- (Other assumptions as per the baseline methodology outlined above).

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

>> Assumptions 2 and 3 are not transparent.

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

>> Some changes are needed, as outlined in a) above (and also in section I).

(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):

>> Data sources are project-based for core data such as bio-diesel produced and consumed, electricity and fuel used in plant, land area for oil seeds, identification of vegetation. Some data are proprietary or official. Others are not specified beyond “publicly available sources”. Since this is the source for the sequestration rates in plantations, and since such rates can vary significantly, more guidance on this would appear necessary.

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

>> Further information is needed how changes of carbon pools should generally be treated and monitored. This refers in particular to the methods to monitor and calculate changes but also to the carbon pools that should be considered for this purpose. The methodology should reflect changes already undertaken or

necessary to the baseline methodology. For example, the reference to emission reductions from sequestration is still included.

c) *State possible data gaps:*

>>

Information needed to assess:

- The “efficiency multiplier”;
- Bio-diesel consumed in the host country for transportation purposes;
- Emissions from production of oil seeds (including the use of N-fertilizer);
- Ex ante monitoring of type of species/areas covered by plantations for oil seeds (otherwise it is difficult to assess the GHG implications of land clearing);
- That CERs will not be claimed by users of bio-diesel.

(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:*

>> Yes.

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, with modifications in CDM-NMB and CDM-NMM as suggested.

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

>> Yes, although both need modification.

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

>> The monitoring methodology requires monitoring the methanol consumed in bio-diesel production in order to estimate associated methane emissions. Changes in the baseline methodology (another leakage source is being proposed) have not been considered in the monitoring methodology. This is clearly inappropriate.

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

>> QA/QC planned for some items – although not all are in the control of the project proponent (e.g. estimating sequestration rates).

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

>> Simple, but subject to same weaknesses as the baseline methodology (particularly data gaps, potential for double-counting).

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

>> Once modified, the methodology should have a wide applicability.

(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:

>> [Data relevant to NM0069 "30 TPD Bio-diesel Project in Andhra Pradesh, India" and its assessment.](#)

b) Indicate any further comments:

>> [No further comments.](#)



Signature of Meth Panel Chair

Date: 14/09/2005 (Jean-Jacques Becker)



Signature of Meth Panel Vice-Chair

Date: 14/09/2005 (José Miguez)

Information to be completed by the secretariat

F-CDM-NMmp doc id number	F-CDM-NM0108
Date when the form was received at UNFCCC secretariat	14 September 2005
Date of transmission to the EB	14 September 2005
Date of posting in the UNFCCC CDM web site	14 September 2005