

 <p style="text-align: center;"><b>CDM: Proposed New Methodology</b>  <b>Meth Panel recommendation to the Executive Board</b>  <b>(version 06)</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:	31 January – 03 February 2006
Related F-CDM-NM document ID number (electronically available to EB members)	F-CDM-NM0126: “National Fertilizers Limited (NFL) Nitrous Oxide Abatement Project”
Related F-CDM-NMex document ID number(s) (electronically available to EB members)	F-CDM-NMex0126: Brodmann / Matsuo
Related F-CDM-NMpu document ID number(s) (electronically available to EB members)	F-CDM-NMpu0126: Heilig / Zheng
<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>	
<p><b>(1) History of submission</b> (to be communicated by UNFCCC Secretariat):</p> <p>&gt;&gt;</p>	
<b>I. Recommendation on the proposed new baseline methodology:</b> (checkmark the choice made)	
<p>Title of proposed new baseline methodology:&gt;&gt; Measurement of the abatement of Nitrous Oxide (N<sub>2</sub>O gas) from a Nitric acid plant:</p>	
<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</i></p>	

*methodology has been reconsidered by the Meth Panel.)*

c. Not to approve the proposed methodology



i. Reasons for non-approval:

>> A fundamental flaw in this methodology, pointed out in the preliminary recommendation, is not addressed. The baseline emissions, calculated from parameters measured ex-ante, is fixed in absolute terms, which could result in a situation where maximum CER is claimed when the facility ceases to operate, which could be due to market conditions or accident, etc. Measurement period is increased to eight weeks rather than four, though it is stated to be conservativeness, no justification or explanation of the same is provided. Though methodology tries to limit the parameters within a certain range, this is useful in addressing the possibility of overestimations. It seems to contradict the assertion of conservativeness that N<sub>2</sub>O emission is at its lowest at the beginning of a campaign.

*(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: >> Measurement of the abatement of Nitrous Oxide (N<sub>2</sub>O gas) from a Nitric acid plant.

a. To approve this proposed methodology with minor changes



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

>>

ii. Minor changes:

>>

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



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

>>

ii. Required changes:

>>

*(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:

>> See above.

*(A new proposal should be submitted in accordance with the procedures for submission and consideration of proposed new methodologies of the Executive Board.)*

**B. General information on submitted proposed new methodology****(1) Title of proposed new baseline methodology:**

>> Measurement of the abatement of Nitrous Oxide (N<sub>2</sub>O gas) from a Nitric acid plant:

**(2) One sentence describing the purpose of the methodology.**

>> This methodology is designed for projects that reduce N<sub>2</sub>O emitted as a by-product of nitric acid production, through insertion of additional catalytic devices just after the ammonia burner (i.e. secondary destruction method).

**(3) Summary description of baseline methodology.**

*Short statements on each on how the proposed methodology: chooses the baseline scenario, demonstrates additionality, calculates baseline emissions, calculates project emissions, calculates leakage, calculates emission reductions.*

>>

The baseline methodology is as follows:

- Baseline scenario: Baseline scenario is a simple comparison of project / no project, based on the assertion that conceivable alternatives such as N<sub>2</sub>O stripping, recycle, and NSCR are unrealistic.
- Demonstration of additionality: Demonstration of additionality is a modified version of the additionality tool, which consists in confirming and providing evidence to support each of the following four conditions:
  - Condition 1: At the starting date of the project activity the nitric acid plant complies with national regulations regarding N<sub>2</sub>O emissions.
  - Condition 2: The project activity is not common practice at nitric acid plants in the region.
  - Condition 3: The project activity would not be commercially viable even taking into account the market value of any potential by-product of the N<sub>2</sub>O destruction technology without the revenues from the sales of the CERs.
  - Condition 4: The financial benefits of the revenues obtained by selling CERs from the project activity will lead to the implementation of the project activity.
- Calculation of baseline emissions: Baseline emissions are measured for a eight week period prior to the installation of the catalyst from the stack gas volume flow rate (Q\_STG), and N<sub>2</sub>O concentration of the stack gas (N<sub>2</sub>O\_co\_STG, multiplied by operating hours). If legal regulations on N<sub>2</sub>O emissions are introduced or altered during the crediting period, the baseline emissions will be adjusted immediately at the time the legislation has to be implemented.
- Calculation of project emissions: Project emissions include the non destroyed N<sub>2</sub>O at the outlet, calculated as a product of volume flow rate times N<sub>2</sub>O concentration at the stack.
- Calculation of leakage: Leakage is assumed not to occur since the secondary catalyst (project activity) will result in no measurable increase in utility usage in the plant.
- Calculation of emission reductions: Emission reduction is calculated by subtracting project activity and leakage emissions from baseline emissions.

**(4) Title of proposed new monitoring methodology:**

>> Measurement of the abatement of Nitrous Oxide (N<sub>2</sub>O gas) from a Nitric acid plant.

**(5) Summary description of the monitoring methodology.**

*Short statements on each on how the proposed methodology monitors the baseline and project scenario and calculates leakage and emission reductions.*

>> As follows:

- Baseline emissions: All relevant parameters are either measured or calculated ex ante in a period of eight weeks prior to the installation of the catalyst.
- Project emissions: All relevant parameters are either measured or calculated continuously.
- Leakage emissions: Leakage is assumed not to occur.
- Emission reductions: Emission reduction is calculated by subtracting project activity and leakage emissions from baseline emissions.

**(6) Relationship with approved or pending baseline and monitoring methodologies (if applicable).**

*a) Does the proposed new methodology include part of an already-approved methodology or a methodology pending approval (see recent EB reports)? If so, please briefly note the relevant methodology reference numbers (AMXXXX or ACMXXXX), titles, and parts included.*

>> Yes; NM0111 "Baseline Methodology for catalytic N<sub>2</sub>O destruction in the tail gas of Nitric Acid Plants".

*b) In particular, is the proposed new methodology largely an amendment or extension of an approved methodology? (i.e. the methodology largely consists of expanding an approved methodology to cover additional project contexts, applicability conditions, etc., and is thus largely comprised of text from an existing methodology) If so, indicate whether the amendments or extensions are appropriate, and explain why.*

>> The methodology is similar to NM0111, which is applicable to project activities reducing N<sub>2</sub>O emitted as a by-product of HNO<sub>3</sub> production, through installation of tertiary methods (end-of-pipe catalysts). It remains to be seen whether amendments and extension is possible, since monitoring points are different, and there were some observations that post-measurement some decomposition of N<sub>2</sub>O can occur that is not captured in the baseline, which does not occur in the tertiary method. However, consolidation would be possible.

*c) Indicate whether, and explain how, any other approved methodology (not noted in response to the previous question) could currently, or with minor modifications, be used to calculate emission reductions from the project activity associated with the proposed new methodology. If so, please indicate the reference number and the parts of the methodology that would need modification.*

>> Both AM0001 "Incineration of HFC 23 Waste Streams" and AM0021 "Baseline Methodology for decomposition of N<sub>2</sub>O from existing adipic acid production plants" (N<sub>2</sub>O from adipic acid) deal with conceptually similar projects, whereas GHG in question is emitted as a byproduct, which is subsequently recovered and destroyed. In both methodologies, baseline emission is calculated by multiplying the amount of the intended substance produced, multiplied by a by-product rate. In this methodology, such an approach is not taken, though this should be feasible.

*d) Please briefly note any significant differences or inconsistencies (baseline emission calculations, leakage methods, and boundary definitions, etc.) between the proposed new methodology and already-approved methodology of similar scope.*

>> Addressed in c).

*e) To avoid potential repetition, feel free to provide one comprehensive answer here that covers questions a through d.*

>>

**C. Details of the evaluation of the proposed new methodology by the Meth Panel:**

**I. Proposed new baseline methodology:** >> Measurement of the abatement of Nitrous Oxide (N<sub>2</sub>O gas) from a Nitric acid plant:

**(1) Determining the baseline scenario and demonstrating additionality:**

*a) Explain the methodological basis for determining the baseline scenario, and whether this basis is appropriate and adequate.*

>> It is asserted that "monitoring of emissions prior to the installation of a secondary catalyst, and just after a primary catalyst noble metal gauze is changed, for a eight week period will generate an accurate but very conservative plant specific N<sub>2</sub>O emission factor." It is not adequate since this does not take into account fluctuation in production or variability in N<sub>2</sub>O generation.

*b) Explain 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.*

>> It does not. See above.

*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 additionality of the project is demonstrated through a flowchart, which incorporates the elements of the additionality tool. Various baseline alternatives, which are theoretically possible but deemed practically impossible, are not considered as possible baseline alternatives. This results in a simple comparison of "with-project" and "without-project" scenarios.

*d) Explain whether the basis for assessing additionality is appropriate and adequate:*

>> It is appropriate and adequate, given the situation of the technology and practicability of other baseline alternatives. Under the applicability condition, it would be reasonable to suppose that the only feasible baseline alternative is to not to implement the project activity. Additionality test contains project/country specific information (page 8, page 11). Alternative of installing non selective catalytic reduction technology (NSCR) in a plant without any existing installed NO<sub>x</sub> abatement technology, which abates N<sub>2</sub>O along with abating NO<sub>x</sub> is neglected (page 6) in the CDM-NMB, whereas, this justification and discussion should be reported in the draft CDM-PDD. The CDM-NMB states that "The sale of the CER's will offset the substantial cost of the catalyst and any plant modifications" (page 10). This should be shown in the draft CDM-PDD and not assumed a priori.

**(2) Methodological basis for calculating baseline emissions and emission reductions**

*a) Explain how the methodology calculates baseline emissions and whether the basis for calculating baseline emissions is appropriate and adequate:*

>> Baseline emissions are measured for a eight week period prior to the installation of the catalyst from the stack gas volume flow rate (Q\_STG), and N<sub>2</sub>O concentration of the stack gas (N<sub>2</sub>O\_co\_STG, multiplied by operating hours). All measurements are taken during the eight week period prior to installation of N<sub>2</sub>O destruction facility. This is not appropriate, since this does not take into account fluctuation in production or variability in N<sub>2</sub>O generation, possibly resulting in a situation where maximum CER is claimed when the nitric acid production facility ceases to operate (due to market conditions, accident, etc).

The methodology in its present form also contradicts the decision made at the 8th Executive Board Meeting which states that the baseline should be defined through "an output- or product-linked definition of baseline values (i.e. CO<sub>2</sub>eq. per unit of output) shall be applied, unless the project participants demonstrate why this is not applicable and provide an appropriate alternative". There is reason to assume that the production performance during the eight week period might not reflect that of the entire crediting period.

The methodology states that "If the actual output of nitric acid (P\_HNO3\_p) exceeds the name plate or design capacity (P\_HNO3\_hist) then subsequent emissions will be claimed neither for the baseline nor for the project scenario". Treatment of the two parameters is not clear. Detailed equation, expressing how the emissions reduction will be calculated in such situations, should be provided.

*b) Explain how the methodology calculates project emissions and whether the basis for calculating project emissions is appropriate and adequate.*

>> Project emissions include the non destroyed N<sub>2</sub>O at the outlet, calculated as a product of volume flow rate times N<sub>2</sub>O concentration at the stack. This is appropriate and adequate.

**(3) 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*

>> Only N<sub>2</sub>O is considered, on the ground that no other greenhouse gas emissions are known to occur in significant quantity from the application of currently available catalysts.

ii) *Physical delineation*

>> The project boundary covers the whole individual nitric acid plant.

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

>> It is appropriate.

**(4) 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):

>> Not appropriate, for the reasons cited above.

**(5) Key assumptions/parameters (including emission factors and activity levels), rationale, data sources and uncertainties:**

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

>> The assumption is that baseline N<sub>2</sub>O measured in a period prior to installation of N<sub>2</sub>O destruction facility is an accurate proxy of the baseline N<sub>2</sub>O emissions that would occur in the absence of project activity. This is clearly problematic, since this does not take into account fluctuation in production or variability in N<sub>2</sub>O generation. Measurement period is increased to eight weeks rather than four, and it is claimed to be conservativeness without much justification. Though the parameters are limited to within a certain range to ensure conservative estimation of emission reductions, this has not served to be useful. It seem to contradict the assertion of conservativeness that N<sub>2</sub>O emissions are at its lowest at the beginning of campaign.

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

>> Not adequate.

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

>> Most data are site-specific. Exceptions are data used for the purpose of projection, which is taken from IPCC Guidelines (1996) & Good Practice Guidance (2000).

d) *Explain the vintage of data recommended (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:*

>> Not appropriate for the reasons cited above.

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

>> It fails in all four criteria, for the reasons above.

f) *State possible data gaps:*

>>

**(6) Assessment of uncertainties:**

a) *Provide an assessment of uncertainties given (e.g. in determining baseline scenario, data sources, key assumptions)*

>> There are no provision to deal with uncertainties with respect to baseline scenario, data sources and key assumptions.



**(7) Leakage:**

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

>> Leakage is assumed to not occur, since the secondary catalyst installed in the Reactor Basket underneath the noble metal gauzes will result in no measurable increase in utility usage within the nitric acid plant.

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

>> It is not clear whether all secondary destruction methods do not result in leakage. Perhaps it is better to state this in the applicability condition.

**(8) Transparency, “conservativeness” and consistency**

*a) Indicate whether the baseline methodology is presented in a transparent way, and if not, what changes are suggested:*

>> It is transparent.

*b) Explain whether the baseline methodology is conservative, and if so, how:*

>> Measurement period is increased to eight weeks rather than four, and its conservativeness is touted without much justification. It seem to contradict the assertion of conservativeness that N<sub>2</sub>O emission is at its lowest at the beginning of campaign. However, the real issue is inappropriateness of calculating baseline emissions without any reference to real-time performance of the facility; conservatism is not an issue here.

*c) Explain whether the baseline methodology is internally consistent, and if not, highlight which sections are inconsistent:*

>> They are internally consistent.

**(9) If relevant, state whether the proposed changes required for the methodology implementation on 2<sup>nd</sup> and 3<sup>rd</sup> crediting periods are appropriate.**

>> Not addressed.

**(10) State the baseline approach selected, indicate whether this is appropriate, and why.**

>> The approach as per paragraph 48 (a) of the CDM modalities and procedures: "Existing actual or historical emissions", as applicable. It is appropriate given the lack of "economically attractive course of action" due to the nature of the project.

**(11) Any other comments:**

*a) State which other source(s) of information (i.e. other than documentation on this proposed methodology available on the UNFCCC CDM web site) have been used by you in evaluating this methodology. Please provide specific references:*

>> None.

*b) Indicate any further comments:*

>> No further comments.

**II. Detailed recommendations on the proposed new monitoring methodology**

Evaluate each section of CDM-NMM. Please provide your comments section by section:

**(1) Indicate if this proposed monitoring methodology is compatible with the proposed baseline methodology described in CDM-NMB of the draft CDM-PDD, and if not, why.**

>> It is compatible.

**(2) Assessment of key assumptions/parameters:**

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

>> See explanation on the baseline methodology.

<p><i>b) State whether the key assumptions are adequate, and whether they have been arrived at in a transparent manner:</i></p> <p>&gt;&gt; They are adequate and transparent, though the baseline methodology itself is not appropriate.</p>
<p><b>(3) Data sources and data quality:</b></p> <p><i>a) Give your expert judgement on whether the data sources and data quality used are adequate, consistent, accurate and reliable. If not, please explain.</i></p> <p>&gt;&gt; They are adequate. However, consistency, accuracy and reliability merits further discussion as well as comparison with approved methodologies (AM0001, AM0021, NM0111).</p> <p><i>b) State possible data gaps:</i></p> <p>&gt;&gt;</p>
<p><b>(4) Leakage (please elaborate, if appropriate):</b></p> <p>&gt;&gt; Leakage is assumed to not occur.</p>
<p><b>(5) Quality assurance and control procedures (please explain):</b></p> <p>&gt;&gt; Uncertainty level is assumed to be "low" without explanation. It is also mentioned that calibration procedure is to be developed, but no specifics are given. However, it should also be noted that this is much the same with similar methodologies such as AM0021 and NM0111.</p>
<p><b>(6) Assessment of the description of the proposed methodology:</b></p> <p><i>a) State whether the proposed methodology has been described in an adequate manner:</i></p> <p>&gt;&gt; It is adequate, though the baseline methodology to which the monitoring methodology is attached is not appropriate.</p> <p><i>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):</i></p> <p>&gt;&gt; Not appropriate, for reasons cited above..</p>
<p><b>(7) Any other comments:</b></p> <p><i>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:</i></p> <p>&gt;&gt; None.</p> <p><i>b) Indicate any further comments:</i></p> <p>&gt;&gt; No further comments.</p>





Signature of Meth Panel Chair .....

Date: 13/02/2006 (Jean-Jacques Becker)



Signature of Meth Panel Vice-Chair .....

Date: 13/02/2006 (José Miguez)

**Information to be completed by the secretariat**

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