REPORT OF THE TWENTY-SEVENTH MEETING OF THE METHODOLOGIES PANEL
UNFCCC Headquarters, Bonn, Germany
28 May - 1 June 2007

RECOMMENDATIONS BY THE METHODOLOGIES PANEL TO THE EXECUTIVE BOARD

A. Opening of the meeting and adoption of agenda

1. The Chair of the Methodologies Panel (Meth Panel), Mr. Akihiro Kuroki opened the meeting.

2. The agenda was adopted as proposed.

3. The Meth Panel thanked the outgoing member Mr. Ashok Sarkar for his dedication and service to the work of the Meth Panel. The Meth Panel also welcomed the new member Mr. Narendra Paruchuri, who was appointed by the Board at its thirty-first meeting.

B. Consideration of proposed new methodologies

4. The Meth Panel considered the proposed new methodologies for the cases mentioned in the table below, as well as desk reviews and public inputs received, where applicable.

5. The final recommendations, proposed by the Meth Panel for the consideration by the Executive Board, are made available on the UNFCCC CDM website at http://cdm.unfccc.int/goto/MPpropmeth.

6. In accordance with the procedures for submission and consideration of a proposed new methodology, project participants may submit, via the DOE, technical clarifications to preliminary recommendations. Preliminary recommendations for which project participants have not provided any clarifications within the (4) week consultation period shall be considered as final recommendations, and will be forwarded to the Executive Board for consideration and made available on the UNFCCC CDM website.

7. The Meth Panel agreed on the following recommendations:

Cases	MP 27[1] recommendation
NM0121-rev: Bumbuna Hydroelectric Project	**C**
NM0160-rev: Shell Cogeneration Project	**C**
NM0171: Use of Hydro Heavy Fuel Oil Technology (HHFOT) to improve energy efficiency at a power plant in Pakistan, as contained in annex 1	**A** (see paragraph 9)
NM0172-rev: Methane Leak Reduction From Natural Gas Pipelines	**C**

[1] Recommendations to the proposed new methodologies from the twenty-seventh meeting of the Meth Panel, where A (recommended for approval), B (recommended for revision) and C (recommended for non-approval) are final recommendations to the Board.

Cases	MP 27[1] recommendation
NM0192-rev: Recovery and utilization of flare waste gases at the Industrial Complex of La Plata Project	**Work in progress[2]**
NM0194-rev: Green House Gas (GHG) emission reduction by Manufacturing of natural surfactant Alpha Olefin Sulphonate - AOS	**Preliminary recommendation**
NM0197-rev: India – Accelerated Chiller Replacement Program	**Preliminary recommendation**
NM0200-rev: Fuel switch project for generation of cleaner power, as contained in annex 2	**A** (consolidated with NM0213, see paragraph 19)
NM0202-rev: AzDRES Power Plant Energy Efficiency and change in fuel mix	**Preliminary recommendation**
NM0203: Energy efficiency improvements of Pucheng Power Plant through retrofitting turbines in China	**B**
NM0205: Improving the Energy Efficiency of Buses in Argentina	**C**
NM0206: Use of coke oven gas for production of dimethyl ether in Luliang Fenyang City, Shanxi Province, China	**C**
NM0207: Xinzhou Guangyu Coal based Cogeneration Project	**C**
NM0208: Afam Integrated Gas and Power (AIGP) project	**Preliminary recommendation**
NM0209: Reduction in GHGs emission from primary aluminium smelter at Hindalco, Hirakud India	**Preliminary recommendation**
NM0210: Biogenic methane injection to a natural gas distribution grid , as contained in annex 3	**A**
NM0211: Boiler replacement project at the Clinical Centre in Skopje, Macedonia	**Preliminary recommendation**
NM0212: SF_6 Switch at Dead Sea Magnesium	**WIP** (see paragraph 10)
NM0213: Fuel Switch for Power Generation from Heavy Fuel Oil (HFO) Based Engines to Natural Gas Based engines at Batamindo Industrial Park (BIP), Indonesia, as contained in annex 2	**A** (consolidated with NM0200-rev, see paragraph 19)
NM0214: Green House Gas (GHG) emissions reduction by use of 'Nimin- a natural nitrification inhibitor' with Urea in cropland	**C**
NM0215: Huaneng Yuhuan Ultra-supercritical Coal-fired Power Project, as contained in annex 4	**A** (consolidated with NM0217, see paragraph 18)
NM0216: Improved electrical energy efficiency by open slag bath operations in ferroalloy production (Highveld Vanadium-Iron Smelter Energy Efficiency Project).	**Preliminary Recommendation**

[2] Work in progress implies that the deliberations on these methodologies could not be concluded at the twenty-seventh meeting of the Meth Panel. These cases will be further considered before providing a recommendation to the Board.

Cases	MP 27[1] recommendation
NM0217: North Karanpura greenfield supercritical coal-fired power project, India, as contained in annex 4	**A** (consolidated with NM0215, see paragraph 18)
NM0218: Kazakhstan - Karaganda – Utilization of Coal Mine Gas (CMM) in a Flare	**C**
NM0219: Production Gas recovery and utilization at Bloque 16 oil field, Ecuador	**C**
NM0220: Avoided emissions from biomass wastes through use as feed stock in pulp and paper production, Kunak,Sabah	**Preliminary recommendation**
NM0221: Improved heat rates and capacity enhancement of Gas Turbines at RIL Patalganga, through retrofit for Inlet Air Cooling	**C**
NM0222: Conversion of SF_6 to the Alternative Cover Gas SO_2 in Magnesium Production in China	**WIP** (see paragraph 10)
NM0223: Western Cape Biodiesel Project	**C**

8. The Meth Panel considered reports from experts on the scientific agreement on methods for the measurement of greenhouse gas emissions from reservoirs, as requested by the Meth Panel at its twenty-sixth meeting for the case NM0121-rev. The Meth Panel noted that the experts were of the view that the extrapolation of point measurements to estimate reservoir-wide emissions may not be very reliable. The experts also noted that further work is underway to improve measurement procedures and these efforts are not likely to conclude in the immediate future. The Meth Panel agreed to recommend that submissions for project activities for hydro power projects with a power density less than 4 W/m2 should only be considered after the expert community working on methods for the measurement of greenhouse gas emissions from reservoirs have concluded their work, except for reservoirs where it can be demonstrated that the emissions are negligible.

9. The Meth Panel reconsidered the case "**NM0171**: Use of Hydro Heavy Fuel Oil Technology (HHFOT) to improve energy efficiency at a power plant in Pakistan", which it had recommended to the Board, for approval, at its twenty-sixth meeting. As per the Board's request, the panel reviewed its recommendation to use the combined tool for identification of baseline scenario and demonstration of additionality. The Meth Panel noted that as the proposal to identify baseline scenario in the submission was based on the procedure of the combined tool and, hence, in view of maintaining consistency in the application of procedures it had suggested the use of the combined tool. The Meth Panel requested the Board to decide among the two options recommend in the draft methodology: namely option 1: use of combined tool; or option 2: use of baseline scenario identification procedure, as proposed by the project participants in line with the combined tool.

10. The Meth Panel considered the cases "**NM0212:** SF_6 Switch at Dead Sea Magnesium" and "**NM0222:** Conversion of SF_6 to the Alternative Cover Gas SO_2 in Magnesium Production in China". The Panel noted that a key factor for estimating the baseline emissions is the specific consumption of SF_6 cover gas and the percentage of SF_6 cover gas destroyed in the process of its use. The Panel noted that, based on the limited literature available on the subject, it appears that the uncertainty in the estimates of destruction of SF_6 cover gas are large. Further, the Panel also noted that SO_2 as a cover gas was common practice in industry prior to the current industry practice of using SF_6 as a cover gas. The Panel will seek expert input to arrive at a more reliable

estimate of the amount of SF_6 destruction and how to address the issue of SO_2 use as cover gas, before concluding its discussions on the case.

C. Clarifications and requests for revisions of approved methodologies

11. The Meth Panel considered the following requests for clarifications and requests for revisions related to the application of approved baseline and monitoring methodologies. The requests submitted and the recommendations provided by the Meth Panel are made publicly available on the UNFCCC CDM web site at http://cdm.unfccc.int/goto/MPclar and http://cdm.unfccc.int/goto/MPrev, respectively. The requests for revisions that resulted in a recommendation by the Meth Panel to revise an approved methodology are reflected in section D below.

Clarification number	Approved Methodology	Title of the request for clarification	MP 27 recommendation.
AM_CLA_0043	AM0025 ver. 6	"Clarification on the definition of 'compost'"	**Clarified (To revise AM0025)**
AM_CLA_0044	ACM0010 ver 02	"Requirement for on site inspections for each individual farm"	**Clarified**
AM_CLA_0045	AM0025 ver. 6	"Clarification on ways to account for emissions from RDF combustion "	**Clarified (To revise AM0025)**
AM_CLA_0046	Tool to determine methane emissions avoided from dumping waste at a solid waste disposal site	"MCF to be considered when waste is piled above ground or is disposed on land which is not designated 'solid waste disposal site'"	**Clarified**

Revision number	Approved Methodology	Title of the request for revision	MP 26 recommendation.
AM_REV_0046	ACM0001 ver. 5	"Proposal to broaden the applicability of ACM0001 to include biogas capture from anaerobic organic waste-water treatment systems using an open pond or lagoon system"	**Not to revise**
AM_REV_0047	ACM0006 ver. 6	"Request to include biomass project supplying power and heat directly to the user instead of electricity grid"	**To revise**
AM_REV_0048	ACM0006 ver. 6	"Allowing co-firing in existing biomass residue fired power generating units(s)"	**Not to revise**

D. Revision of approved methodologies

12. **AM0025:** The Meth Panel recommended to revise the approved methodology AM0025 in response to requests for clarification AM_CLA_0043 and AM_CLA_0045, as contained in annex 5. The revision clarifies that approved methodology is applicable to project activities:

(a) If output of composting activity is disposed of in landfill; and

(b) If refuse derived fuel is used for either generation of heat or co-generating energy.

13. **ACM0001:** The Meth Panel recommended to revise the approved consolidated methodology ACM0001 to include procedures for estimating emissions reductions from use of captured landfill gas for energy generation. The present version of the approved consolidated methodology requires the use of other approved methodologies, if emissions reductions are claimed for use of captured landfill gas for energy purposes. Further, the panel recommended that, if the Board approves the draft methodology based on case NM0210, the approved consolidated methodology should be amended to make it applicable to project activities where the captured landfill gas is used to supply consumers through a natural gas distribution network. The revised version of the methodology is contained in annex 6.

14. **ACM0006:** The Meth Panel recommended to revise the approved consolidated methodology ACM0006 in response to the request for revision AM_REV_0047. The revision to the approved methodology shall be considered by the panel at its twenty-eighth meeting, before recommending to the Board.

E. Executive Board request on the use/application of approved methodologies

15. The Meth Panel considered the request of the Board, as per the thirtieth meeting of the Board, to review the approved methodology AM0009. The request was to consider whether a method for forecasting the baseline oil production levels and volumes of gas recovered from the oil field, during the crediting period, should be stipulated to provide greater accuracy to the ex-ante emission reductions estimations. The panel noted that in oil extraction projects the estimate of associate gases is determined based on an area, which the contracted party (ies) are authorized to develop, and a production target is established by development survey. The estimated production of associated gas depends on, among other factors, the likely (but not definite) number of wells drilled to ensure the production target. Therefore, the uncertainty in such estimates can be significant. The panel was of the view that estimates provided in the survey used for defining the terms of the underlying oil production project should be used to present the estimated flare reduction, which could be confirmed by validating DOE. Further, at verification the DOE could check the production data for oil and associate gas. If the oil production differs significantly from initial production target, then it should be checked upon verification that this is not intentional, and that such a scenario is properly addressed by the contract between the contracted party(ies).

16. The Meth Panel considered the Board's request for technical advice on a request for deviation to use the approved consolidated methodology ACM0008 for a project activity that captures mine methane from a gold mine. The panel noted that approved consolidated methodology is not applicable to virgin coal bed methane (VCBM). VCBM is defined as methane from boreholes that are drilled with the purpose of extracting methane and areas that would not be mined and the methane release from these boreholes would not influence possible methane emissions in the mined areas. It further noted that in gold mines, the boreholes are drilled for the sole purpose of obtaining geological information regarding the whereabouts, quality and behaviour of the gold bearing ore-deposit. The panel also noted that the boreholes are not always drilled with the intent of pre-mining methane draining. Therefore, all the areas where the boreholes are drilled may not necessarily be mined through, thus categorising these boreholes mine methane as VCBM. In such a case the approved consolidated methodology is not applicable. The panel also noted that the drilling of boreholes could also be influenced by the incentive to enhance methane recovery. Taking these aspects into account, the panel was of the

view that the deviation is not unique to the proposed project activity and therefore, project participants should be advised to submit a proposed new methodology for addressing these issues.

F. Consolidated methodologies

17. The Meth Panel reconsidered the draft consolidated methodology, proposed by it to the Board at its twenty-sixth meeting, as requested by the Board. The draft consolidated methodology is based on the approved methodology AM0032, approved consolidated methodology ACM0004, the case NM0179 and also some elements of the cases NM0155-rev and NM0192, as contained in annex 7. As requested by the Board the draft was revised as follows:

(a) Expand the applicability to project activities where forms of heat other than steam are generated;

(b) Expand the applicability to project activities that use waste pressure to generate electricity; and

(c) Provide an alternative to establish the quantitative cap on waste energy generation, prior to the implementation of the project activity, where historic measurement data is not available.

(d) The panel explained that the three year data requirement was proposed by the proposed new methodology submissions based on which the draft consolidated methodology is prepared, which the panel found appropriate taking account of the possible variability of waste energy generation due to various factors. It also highlighted the fact that the proposed draft consolidated methodology provides options to establish baseline parameters if historic data is not available.

18. The Meth Panel recommended draft of "consolidated baseline and monitoring methodology for new grid connected fossil fuel fired power plants using a less GHG intensive technology" based on the proposed new methodologies: NM0215 (Huaneng Yuhuan Ultra-supercritical Coal-fired Power Project) and NM0217 (North Karanpura greenfield supercritical coal-fired power project, India). The draft methodology is applicable to project activities that establish new power generation plant using low greenhouse gas intensive technology. The draft consolidated methodology is contained in annex 4. The panel recommended options to the Board for the following:

(a) Use of investment analysis only or use the "tool for demonstration and assessment of additionality" to demonstrate additionality of such project activities.

(b) Whether or not Power plants/units that use the same technology as the project plant should be excluded from the sample used to estimate the efficiency of the identified baseline power plant.

19. The Meth Panel recommended draft "consolidated baseline methodology for fuel switching from coal and/or petroleum fuels to natural gas in power plants for electricity generation" based on proposed new methodologies: "**NM0200-rev** - Fuel switch project for generation of cleaner power" and "**NM0213**: Fuel Switch for Power Generation from Heavy Fuel Oil (HFO) Based Engines to Natural Gas Based engines at Batamindo Industrial Park (BIP)". The draft methodology is applicable to project activities that switch to low GHG intensive fuels in existing power generation plants, which are either connected to the electricity grid or supply

electricity to captive consumers. The draft consolidated methodology is contained in annex 2. The Panel recommended options to the Board for the following:

(a) Use of investment analysis only or use the "tool for demonstration and assessment of additionality" to demonstrate additionality of such project activities.

G. Withdrawal of approved methodologies

20. The Meth Panel recommended the withdrawal of approved methodology AM0032 (Methodology for waste gas or waste heat based cogeneration system) and ACM0004 (Consolidated methodology for waste gas and/or heat for power generation), which are incorporated into the draft consolidated methodology for cogeneration using waste gas, referred to in paragraph 17 above. The approved methodology AM0032 is for project activities that use waste gas to cogenerate energy for on-site use or export. The approved consolidated methodology ACM0004 is for project activities using waste gas, generated at existing or new industrial facility, to generate electricity for own use or export to the grid. Whereas, the new recommended draft consolidated cogeneration methodology is applicable to all project activities that could apply either AM0032 or ACM0004.

H. Methodological tools

21. The panel discussed the draft tool for estimation of project emissions from fossil fuel consumption within the project boundary and recommended its approval. The tool is contained in annex 8.

22. The Meth Panel discussed the draft tool for estimation of project emissions from electricity consumption within the project boundary and recommends its approval. The tool is contained in annex 9.

23. The Meth Panel discussed a draft tool for estimating emissions from cultivation of biomass on degraded land. The panel recommended to the Board to launch a call for public comments on the draft tool, as contained in annex 10.

24. The Meth Panel considered a further concept namely a list of crops used as feedstock for the production of biofuels, that if grown on degraded lands, are likely to result in negligible GHG emission from the cultivation of these crops and, therefore in such cases these emissions could be neglected.

I. Recommendation on General guidance

25. Issue of upstream emissions of biomass energy project activities: The Meth Panel discussed the issue of calculation of upstream GHG emission for biomass energy project activities based on cultivated biomass. These GHG emissions may include the GHG emissions associated with deforestation of land effected directly or indirectly by the project activity.

(a) The production of a bioenergy carrier (e.g. biodiesel) typically involves a number of steps in production chain that generate GHG emissions. These steps in the production chain may or may not be included within the project boundary. For example, bioester production involves: (1) production of agricultural raw material (for instance soybean), (2) production of vegetable oil from the agricultural raw material and (3) production of the ester from the vegetable oil. A project activity implementing a switch from fossil fuel to biofuel can be based on either of the following possibilities:

(i) Biofuel purchased from the market, i.e., the producer of biofuel is not identifiable;

(ii) Biofuel produced from vegetable oil purchased from the market, i.e., the producer of vegetable oil is not identifiable;

(iii) Biofuel produced from vegetable oil that is produced from agricultural raw material, e.g. soybean, purchased from the market, i.e., the producer of agricultural raw material is not identifiable;

(iv) Biofuel produced from vegetable oil that is produced from agricultural raw material, e.g soybean, cultivated within the project boundaries.

(b) The Meth Panel agreed to develop guidance on calculating upstream emissions for these various configurations of bioenergy carrier production, as described in sub-paragraph a (i) to a (iv) above, depending, inter alia, the nature of the agricultural raw material (traded on the market or not) used to produce the bioenergy carrier fuel.

(c) As a first step the Meth Panel agreed to undertake a synthesis of the information available on the GHG emissions associated with biofuel production in Non Annex I countries. The synthesis will consider the different ways to produce biofuels as well as the dependence of GHG emissions to the localisation of the production of different steps in the production chain. The aim of the Meth panel is, inter alia, to recommend a methodological approach to estimate such emissions and to explore the possibility of providing conservative default values on a regional basis, which could be easily used by project proponents.

26. Issue of project activities that produce global products: The Meth Panel discussed the issue of applicability condition regarding "displacement of production in Annex I country by project activity production" of the approved methodology AM0037 "Flare reduction and gas utilization at oil and gas processing facilities", as requested by the Board at its twenty-sixth meeting. The Meth Panel noted that the approved methodology does not provide a procedure for identification of baseline scenario for the production of the product using flared gas. The Panel agreed to consider proposals for revision of the methodology to include a procedure for baseline scenario for production facility. The Meth Panel will consider the draft revision of the approved methodology at its twenty-eighth meeting.

27. Project activities that improve combustion efficiency: The panel noted that some of the new proposed methodologies submitted are for project activities that undertake measures for improving the combustion efficiency of fuels in energy generation equipments. The panel would like to clarify that the improvement of combustion efficiency in some cases may lead to energy efficiency, nonetheless, the project proponents should clearly distinguish the saving in fuel from such projet activies that are due to combustion efficiency and those that are due to energy efficiency, as the reduction in GHG emissions occur only due to improvement in energy efficiency alone. Though improvement in combustion efficiency saves fuel but these fuel savings are because of better oxidation of unburnt carbon in absence of the project activity and thus do not result in decrease in GHG emissions.

28. The Meth Panel discussed the draft report prepared for the Board on addressing uncertainty in estimating emissions reductions. The panel agreed to finalize the report on uncertainties in emissions reduction estimation and its recommendation, to the Board, at its twenty-eighth meeting.

J. Roster of experts

29. The Meth Panel noted the satisfactory completion of the desk reviews undertaken for proposed new methodologies considered at the meeting.

K. Schedule of meetings and rounds of submissions of proposed new methodologies

30. The Meth Panel confirmed that its twenty-eighth meeting will be held from 9 to 13 July 2007.

The Meth Panel reminded project participants that the deadline for the twentieth round of submissions of proposed new methodologies is to be 3 September 2007. The Meth Panel also reminded project participants that baseline and monitoring methodologies can be submitted at any time prior to this deadline.

Annexes to the twenty-seventh meeting of the Meth Panel

Annex 1: Draft reformatted baseline and monitoring methodology based on NM0171-rev

Annex 2: Draft consolidated baseline and monitoring methodology for fuel switching from coal and/or petroleum fuels to natural gas in power plants for electricity generation based on NM0200-rev and NM0213

Annex 3: Draft reformatted baseline and monitoring methodology based on NM0210

Annex 4: Draft consolidated baseline and monitoring methodology for new grid connected fossil fuel fired power plants using a less GHG intensive technology based on NM0215 and NM0217

Annex 5: Draft revision to AM0025

Annex 6: Draft revision to ACM0001

Annex 7: Draft consolidated baseline and monitoring methodology for GHG emission reductions through waste energy recovery

Annex 8: Draft tool for estimating project emissions from consumption of fossil fuel within the project boundary

Annex 9: Draft tool for estimating project emissions from consumption of electricity within the project boundary

Annex 10: Draft tool for estimating emissions from cultivation of biomass

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