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|  <p style="text-align: center;"><b>CDM: Proposed New Methodology</b><br/> <b>Meth Panel recommendation to the Executive Board</b><br/> <b>(version 04)</b><br/> <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:   | 4 - 8 April 2005   |
| Related F-CDM-NM document ID number<br>(electronically available to EB members)   | F-CDM-NM0071:<br>“BOF gas recovery at Jindal Vijayanagar Steel Limited (JVSL) and combustion for power generation and supply to Karnataka Grid, India” |
| Related F-CDM-NMex document ID number(s)<br>(electronically available to EB members)  | F-CDM-NMex0071:<br>Spalding-Fecher / Sharma  |
| Related F-CDM-NMpu document ID number(s)<br>(electronically available to EB members)  |  |
| <p><i>Note to those completing this form, as applicable: Please provide recommendations on the proposed new baseline and monitoring methodologies based on an assessment of CDM-NMB and CDM NMM and of their application in sections A to E of the draft CDM PDD, desk reviews and public input. Please ensure that the form is entirely filled and that arguments and expert judgements are substantiated.</i></p>   |  |
| <b>A. Final recommendations by the Meth Panel</b>   |  |
| <b>I. Recommendation on the proposed new baseline methodology: (checkmark the choice made)</b>  |  |
| Title of proposed new baseline methodology:>> Avoid flaring of waste gases from steel manufacturing operations and its utilization for generating thermal power thereby substituting fuel and supplying to grid.  |  |
| <p>a. To approve this proposed methodology with minor changes</p> <p><input type="checkbox"/></p> <p>i. Conditions under which this proposed methodology is applicable to other potential CDM project activities (e.g. project type, region, data availability):</p> <p>&gt;&gt;</p> <p>ii. Minor changes:</p> <p>&gt;&gt;</p>  |  |
| <p>b. To reconsider this proposed methodology, subject to required changes</p> <p><input type="checkbox"/></p> <p>i. Conditions under which the proposed methodology is applicable to other potential projects (e.g. project type, region, data availability):</p> <p>&gt;&gt;</p> <p>ii. Required changes:</p> <p>&gt;&gt;</p> <p><i>(Project participants shall make required changes to the proposed new methodology and send it back to the Meth Panel. The proposed new methodology will be reconsidered by the Meth Panel if changes required are made by the project participants. The Executive Board will only consider this proposed new methodology after the revised proposed methodology has been reconsidered by the Meth Panel.)</i></p> |  |

## c. Not to approve the proposed methodology



## i. Reasons for non-approval:

>> Project participants have not addressed a number of issues flagged in preliminary recommendations in the clarifications. In particular the following issues were not covered in the re-submission:

- 1) Need to justify use of weighted average for operating margin (OM), or change this and correct the combined margin accordingly (already asked but not properly addressed);
- 2) In all cases, complete reference to IPCC emission factors has should be provided all time (already asked but not properly addressed);
- 3) Use relative emissions as baseline rather than absolute emissions, or justify (already asked but not properly addressed);
- 4) There should be internal consistency in Case II mentioned in Section D1 of CDM-NMB and Baseline II. In Baseline II it is stated in the assumptions listed in CDM-NMB that it is applicable to new power projects based solely on waste gas. From this interpretation Baseline II only addresses a sub-set of situations possible under Case (ii) (already asked but not properly addressed);
- 5) The use of the "Tool for the demonstration and assessment of additionality" for testing the additionality of the project activity should be clearly stated in the text and not in a footnote.
- 6) Methodology should include a more robust process for assessment of all possible alternative baseline scenarios as well as procedure for evaluating these alternatives (already asked but not properly addressed);
- 7) The methodology should include conditions for application of Baseline I and II (already asked but not properly addressed);
- 8) There is ambiguity in the methodology whether it is applicable to existing steel plants or newly constructed steel plants or both. This has an implication both on the formulae for the baseline as well as designing the monitoring methodology (already asked but not properly addressed);
- 9) Treatment of leakage due to use of hydrocarbon fuel (if displaced by project activity and in turn used by other smaller power generators who currently use renewables like biomass) should be better addressed and not simply disregarded.

*(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.)*

## II. Recommendation on the proposed new monitoring methodology: (checkmark the choice made)

Title of proposed new monitoring methodology: >> Monitoring generation, storage and stabilization, and supply of waste gases from steel manufacturing manufacturing operations to generate thermal power plant(s).

## 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:

>> Methodology should be adapted accordingly, to reflect the new changes suggested for the baseline methodology.

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

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

### **I. Proposed new baseline methodology (specify title here): >>**

**(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 considers the use of waste gas that would otherwise have been flared to generate electricity. It considered three possible cases: (1) where the gas supplies an existing power plant and generation is not increased (2) an existing power plant where the gas allows increased production, and (3) gas supplies a greenfield power plant connected to the grid. Case 1 is treated as a fuel switching methodology, where baseline emissions are related to existing fuel use at power station. For cases (2) and (3), the additional power output fed into the grid affects both the operation and construction of power plants, so a combined margin approach is used.

*b) State the approach selected:*

>> The proposed approach 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 appropriate, because the baseline scenario is the current fuel use and use of the gas at the production facility. This is appropriate for this project category, particularly given the conditions placed on the methodology.

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

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

>> No. This part of methodology has to be further improved.

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

>> The underlying rationale is that, without the capture and use of excess gas for power generation, the process gas will be flared, the existing power plant will use more fossil fuels, and the more power generation will be needed by the mix of grid plants. This means that, for emissions from the existing power plant up to historical production levels, the average emissions rate can be used for the displacement of existing fuels. For production beyond historical levels, or for gas supplying a new power station, emissions should be determined by the combined margin of the relevant power grid. The combined margin is applied using a weighting average emissions factor for the operating margin, however, without sufficient justification.

*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?*

>> In a footnote, and not in the text, project participants (PPs) say that the additionality tool is to be used. This has to be clearly stated in the text.

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

>> The determination of the baseline scenario has to be improved. The methodology should include a more robust process for assessment of all possible alternative baseline scenarios as well as procedure for evaluating these alternatives. The assessment of additionality is ok now with the use of the additionality tool. However, as suggested before, this has to be clearly stated in the text and not in a footnote.

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

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

>> No. Even after the revision methodology is not clear yet. The use of weighted average for OM has to be better justified (or changed). Use of relative emissions as baseline rather than absolute emissions has to be justified. There should be internal consistency in Case II mentioned in Section D1 of CDM-NMB and Baseline II. In Baseline II it is stated in the assumptions listed in CDM-NMB that it is applicable to new power projects based solely on waste gas. From this interpretation Baseline II only addresses a sub-set of situations possible under Case (ii).

The methodology should include conditions for application of Baseline I and II. There is ambiguity in the methodology whether it is applicable to existing steel plants or newly constructed steel plants or both. This has an implication both on the formulae for the baseline as well as designing the monitoring methodology.

*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):*

>> The project document does not provide sufficient information as well as details in CDM-NMB are not sufficient to ascertain whether the methodology is appropriate for the referred proposed Project. There could be a possibility that the methodology is not appropriate.

*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.*

>> Not clear for the reasons discussed above.

Please explain:

>> Inadequate methodological description: The methodology doesn't explain how the baseline scenario is

identified, rather it states the baseline scenario. Further, the baseline scenario description states that there are three possibilities based on combination of case (i) and case (ii) (page 5, CDM-NMB). Case (i) refers to continuation of fossil fuel use, in absence of the project, in an existing power plant. Case (ii) refers to expansion of existing power plant capacity, using existing fossil fuel, and/or construction of new power plant to meet the shortfall in supply. The three possibilities are, case (i) only, case (ii) only or combination of case (i) and case (ii). The methodology has provided no explanation of conditions for applicability of each case. Description in the draft CDM-PDD gives an impression that a combination of case (i) and case (ii) is expected, whereas, the baseline emission estimations points to the fact that case (ii) is considered as the baseline.

Finally, the use of a weighted average EF for operating margin without justification is problematic.

**(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 they can, but only after the recommended changes have been made.

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

>> The baseline has to reflect the historical characteristics of the facility used as the project site. The relevant grid has also to be included in the project boundary.

*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 for all project data (e.g. waste gas volume, waste gas consumption as existing plant, Gross Calorific Value (GCV) for gas, power generation efficiency of gas) is 3 years. The problem is that this historical data is used to set absolute baselines for the project. This is not correct, because if production of gas declined after implementation of the project, the project would receive too many credits. If the proponents want to cap the baseline (to be conservative, as suggested in section D.8 to prevent leakage), then this should be done explicitly and not through using a fixed absolute baseline.

**(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*

>> All direct on-site CO<sub>2</sub> emissions (including emissions from fuel combustion and steel manufacturing operations) and those due to combustion of excess waste gases to generate electricity

*ii) Physical delineation*

>> The project boundary covers points of generation of waste gases in the steel manufacturing operations (up-stream of project activity), collection and transportation of these gases to the power plant(s) through a gas handling network/grid, generation and delivery of electricity from power plant(s) to the grid (down-stream of project activity), and all associated equipment for such project activity under control of the project proponent(s).

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

>> Yes, in its revised version project boundary seems to be appropriate.

**(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:*

>>

- 1) Emission factor for all power plants using GHG intensive fuels will be calculated as per the IPCC recommended values (although it is not always clear from which IPCC document values will be taken). This assumption continues to be problematic, as it is not clear whether it refers to Baseline 1 or Baseline 2.
- 2) Project will not result in any additional GHG emissions other than those emitted from flaring of waste gas in the baseline.
- 3) The project activity will not result in diversion of waste gases normally required for internal heating requirements to a power generator.
- 4) Any additional waste gases available due to efficiency improvements in internal heat utilization process improvements in the steel plant during crediting period will be considered for accrual of CDM benefits.
- 5) If additional waste gases are produced due to use of more of GHG intensive raw materials in steel production, such additional gas will not be considered for CDM benefits.
- 6) In terms of the combined margin, the methodology assumes that using the weighted average emissions factor for the grid is appropriate, which is problematic.

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

>> Not yet. For example, methodology does not refer to the criteria in ACM0002 for determining when weighted average emissions factor (OM type (d)) can be used, and does not justify this choice adequately.

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

>> No. More justification is needed for points raised in previous sections.

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

>>

- 1) Quantity of waste gas available/provided for power generation from proprietary data of steel operations/power plant(s).
- 2) Gross calorific value of various waste gas streams from proprietary data of steel operations/power plant(s).
- 3) Amount of existing GHG intensive fuel consumed by power plant from proprietary data of power generator(s) where fuel is replaced.
- 4) Carbon emission factors and net calorific values for various GHG intensive fuels from IPCC guidelines
- 5) Electricity delivered to the grid from national/regional level publicly available data.

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

>> In this new version data used seem to be adequate.

*f) State possible data gaps:*

>> In this new version no gaps were identified.

**(7) Assessment of uncertainties:**

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

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

>> Yes, but these uncertainties should be monitored and included in monitoring plan.

ii) *Algorithms/formulae:*

>> No, does not discuss this.

iii) *Key assumptions:*

>> "Project will not result in diversion of waste gases normally required for internal heating requirements to a power generator" - this is not adequately discussed or included in the monitoring plan.

iv) *Data:*

>> See comments on data in previous section.

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

>> Yes, but baseline scenario uncertainties should be monitored in monitoring plan.

**(8) Leakage:**

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

>> The methodology recognizes that leakages could occur due to the use of hydrocarbon fuel (if displaced by project activity and in turn used by other smaller power generators who currently use renewables like biomass). However it rules out this possibility by saying that that would require replacement and retrofitting of existing power generating equipment, which may not be feasible for a smaller generator. But should be better justified.

Also, the methodology recognizes that potential leakages could also occur if the project participant creates a situation where the normal use of waste gases for internal requirements in the steel operations is minimised/reduced/avoided through use of any other substituting GHG intensive fuel(s), and the avoided waste gases due to such use of substituting GHG intensive fuel(s) are then diverted for additional electricity generation. But methodology addresses such type of leakage potential by identifying and defining areas where waste gases are required for normal internal use, and if any alternate GHG intensive fuel(s) is(are) used in these areas.

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

>> Except for the first point raised, treatment for leakage seems to be appropriate now.

**(9) Transparency and "conservativeness":**

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

>> Yes, except for some points raised before.

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

>> Most of the methodology is conservative, but the use of weighted average for the operating margin may not be, and the use of absolute baselines could prove problematic if gas production falls.



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

&gt;&gt;

Strengths:

- Draws on ACM0002 and EB additionality tool,
- Relatively low cost,
- Incorporates assumptions on baseline use of waste gases.

Weaknesses:

- Incorrect use of operating margin and
- Use of absolute vs. relative baselines.

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

>> The methodology is not applicable where national policies require the recovery and use of waste gases. It is not clear how policies that encourage or support gas use are supposed to be considered or how they would affect the baseline. The language in this section needs to be clearer

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

&gt;&gt;

- 1) Applicable to steel production plants using BOF route where part of the waste gases in facility is normally used for internal heating requirements, and the remaining waste gases would have been flared
- 2) Project activity does not induce diversion of waste gases required for internal usage;
- 3) Proposed project activity does not result in integrated process change, except for possible associated changes due to use of waste gases for electricity generators;
- 4) There are neither local regulations/ programmes to constrain use of GHG intensive fuels (like coal) nor any regulation making use of waste gases mandatory;
- 5) Waste gas is supplied to partially replace existing/planned fuel use in an existing/new power plant or a new power plant facility solely based on use of waste gas or a combination of all the above;
- 6) There are only two possible alternatives: continued flaring of excess waste gases over and above the internal consumption, or its use for power generation; and
- 7) Project activity results in supply of electricity to local grids that do not have surplus power, unless the cost of generation and supply makes exports to other grids attractive.

**(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:

>> Consolidated methodology for grid-connected electricity generation from renewable sources (ACM0002), "Tool for the demonstration and assessment of additionality".

b) Indicate any further comments:

>> No additional comments.



**II. Proposed new monitoring methodology (specify title here):** >> Monitoring generation, storage and stabilization, and supply of waste gases from steel manufacturing manufacturing operations to generate thermal power plant(s).

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

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

*Describe new methodology:*

>> The methodology describes how to monitor gas consumption and characteristics (for gas that replaces other fuels for power generation), the characteristics of the grid (for additional power generated), and project gas use, and relevant regional steel industry characteristics.

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

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

>> The major problem with this methodology is that is primarily concerned with collecting baseline data, not with ongoing monitoring of emissions reductions. Much of the data in the tables is historical data (e.g. X, Y, Z, Q, GCV, HR, GEN), and it is not clear whether any of this data is used to update the baseline. The methodology does not say that the operating margin will be updated within the crediting period, but data is still collected annually on grid plant operations - the rationale for this is not clear, unless it is to update the OM in subsequent periods.

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

>> They are not transparent, and it is not clear whether this data is monitored ex-post, and, if so, how it is used.

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

>> They are useful for the baseline (except the problem with using regional data for X, Y and Z, as mentioned earlier) but not for monitoring. It is not clear why many of the variables are needed if the baseline is a fixed absolute (or even fixed relative) baseline. Only project gas consumption and characteristics, and perhaps the actual efficiency of the project power station would need to be monitored. Grid data should only be needed when the baseline is revised at the end of the crediting period.

**(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):*

>> Gas consumption is measured at project site. Regional industry characteristics are estimated from last 3 years public data (see earlier discussion of problems with regional data). It appears that Q (waste gas consumption) is based on historical rather than contemporary monitored data, which is problematic. Gas characteristics and heat rate/efficiency are estimated from historical plant data. Grid plant generation data are sourced from published data.

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

>> No. Regional data is inappropriate. Gas characteristics should be monitored during project, as should gas consumption. Grid data is only needed for baseline, unless baseline is to be revised before renewal of crediting period.

*c) State possible data gaps:*

>> Actual gas consumption and characteristics. If OM is to be revised before renewal of crediting period, will need fuel consumption data for grid plants. Formulae and data source for estimating the heat rate for power generation from waste gas and calorific value of waste gas is not reported. Data source for estimating internal use of waste gas, flaring of waste gas and generation of waste gas is not clearly stated.

**(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:

>> It is well described, but the same as the baseline methodology- because it is about data needed for an ex-ante baseline, not a monitoring protocol. It is not a monitoring plan but an ex-ante baseline data collection plan.

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):

>> No, it needs to be revised as suggested in this review.

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

>> Only if revised as suggested in this review.

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

>> As with comments on baseline methodology in previous section, the leakage arguments in this methodology are difficult to understand, and it is not clear how they are captured in B.5

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

>> The methodology refers to ISO9000:2000, but it is not clear that all potential project sites would have this qualification, or that it covers all of the necessary QA/QC.

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

>> This methodology must be substantially revised before it is useful - in its current form it is not a monitoring methodology.

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

>> Same as for baseline methodology, if revised appropriately.

**(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:

>> Consolidated methodology for grid-connected electricity generation from renewable sources (ACM0002).

b) Indicate any further comments:

>> A thorough editing of the document will improve the readability.

Signature of Meth Panel Chair .....

Date: 15/04/2005

(Jean-Jacques Becker)

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

Date: 15/04/2005

(José Miguez)

| Information to be completed by the secretariat        |                     |
|---|---------------------|
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