

 <p style="text-align: center;"><b>CDM: Proposed new methodology expert form (version 03)</b> (To be used by methodology experts providing desk review for a proposed new methodology)</p>	
Name of expert responsible for completing and submitting this form	Sudhir Sharma
Related F-CDM-NM document ID number	NM0071
<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 annexes 3 and 4 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. Evaluation of the proposed new methodologies by desk reviewers:</b>	
<b>I. Evaluation of the proposed new baseline methodology:</b>	
<p>Title of new baseline methodology:&gt;&gt;Avoiding flaring of waste gases from steel manufacturing operations and its utilization for generating thermal power thereby substituting fuel and supplying to grid.</p>	
<p>i. Conditions under which this methodology is applicable to other potential projects (e.g. project type, region, data availability):</p> <p>&gt;&gt;(i) The methodology is applicable to all steel production plants using BOF route where a fraction of the waste gases generated in BOF is used for energy purposes within the plant and rest is used to produce electricity.</p> <p>(ii) The 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.</p> <p>(iii) There are no regulations on use of BOF waste gases in the host country.</p> <p>(iv) The power plant supplies power to grid that is not supply surplus.</p> <p>(v) The credits claimed are restricted to waste gas quantity fixed as difference between the waste gas generation and internal consumption of steel plant in the baseline.</p> <p>(vi) The implementation of the project does not affect the process of steel production or replacement of any existing equipment.</p> <p>(vii) There are only two possible alternatives, viz., continued flaring of excess waste gases, over and above the internal consumption, or its use for power generation.</p> <p>(viii) The IPCC default emission factor for fuel is appropriate choice of emission factors.</p> <p>(ix) Data is available from public sources for estimating baseline emissions.</p> <p>ii. Strengths and weaknesses of the methodology:</p> <p>&gt;&gt;Strengths:</p> <p>Weakness:</p> <p>(i) It is not clear whether the methodology is applicable to existing steel plants or new steel plants using BOF route or both types of plants. The methodological steps should incorporate the implications of the above.</p> <p>(ii) Methodology doesn't include steps for identification of possible alternative baseline scenarios and selection of the baseline scenario.</p> <p>(iii) The additionality assessment description is lacking in details.</p> <p>(iv) The methodology has two possible baselines but doesn't clearly state the conditions or project categories to which each of these baselines is appropriate.</p> <p>(v) It is stated that Baseline II is based on ACM0002 but a number of features of ACM0002 that</p>	

make the baseline estimation robust have not been included. also, there is no explanation provided for not doing so.

(vii) Methodology includes only generic principals to ensure conservative baseline methodology without any specifics.

iii. Any changes needed to improve the methodology:

Minor changes:>>

(i) Approach mentioned in Section C2, CDM-NMB should be "Existing actual or historical emissions, as appropriate" in place of "the current or existing emission".

(ii) There should be internal consistency in Case II mentioned in Section D1 of CDM-NMB and Baseline II. Baseline II, it is stated in the assumptions listed in CDM-NMB, is applicable for new power projects based solely on waste gas. From this interpretation Baseline II only addresses a sub-set of situations possible under Case (ii).

(iii) The parameter "W" in Step 1 of Section D9 CDM-NMB has not been defined.

(iv) Reference for IPCC emission factors has should be provided.

Major changes: >>

(i) The CDM-NMB and CDM-PDD should be carefully edited to ensure clarity and consistency.

(ii) Methodology should include a more robust process for assessment of all possible alternative baseline scenarios as well as procedure for evaluating these alternatives.

(iii) The methodology should include conditions for application of Baseline I and II.

(iv) Methodology makes a number of implicit assumptions vis-à-vis the formulae and parameters used. These should be explicitly stated with an assessment of their impact on the baseline.

(v) Baseline II in the methodology, which is based on ACM0002, should include the elements of ACM002 to identify the spatial scope of grid system, choice of emission factors for import of electricity, choice of formulae to estimate operating margin, etc. This will make the methodology more robust and applicable to a wider range of situations. At present the underlying assumption is that "southern grid" is the spatial scope of the grid system and contribution of low-cost must run plants is less than 50% of total generation.

(v) The methodology presents only summary of the additionality assessment tool recommended by CDM-EB as additionality assessment steps. The tool is a guide and it should be used to provide specific steps to undertake additionality analysis. Also, there has to be an internal consistency between the baseline scenario and the investment analysis for additionality test. At present the underlying assumption is that similar investment analysis is applicable to both the baseline cases.

(vi) 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.

## II. Evaluation of the proposed new monitoring methodology:

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

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

>>The methodology can be used for projects wherever the baseline methodology is applicable.

ii. Strengths and weaknesses of the methodology:

>>Strength

Weakness:

(i) The monitoring methodology, as is the case with the baseline methodology, doesn't specifically state whether the methodology is for new steel plants, existing steel plants or both. If the methodology is for proposed utilization of waste from an existing steel plant there is a possibility of quantum of waste gas used for claiming credit to be more than that flared in the baseline.

(ii) The methodology uses default parameters where it is possible to monitor project specific data.

(iii) The methodology lacks in clear and precise definition of data to be monitored, sources of data and other relevant information.

(iv) Methodology lacks in precise QC and QA procedures.

iii. Any changes needed to improve the methodology:

a. Minor changes:>>The concept of "recording frequency" and "proportion to be recorded" should be clearly reflected in the monitoring plan for the methodology.

(ii) The data variables GEN(i,y) and GEN (m,y) in table B.2.3 needs to be more clearly defined.

(iii) Step 4 in B.2.3 is not consistent with the assumption made in baseline methodology that "Baseline II is applicable for cases where the power projects are solely based on waste gas".

b. Major changes: >>

(i) The conditions stated for application of methodology are the same as those for application of the baseline methodology. Rather than repeating the assumption, the applicability conditions could simply state that methodology is applicable to only cases where the baseline methodology is used. Applicability condition specific to the monitoring methodology should be stated in CDM-NMM. Similarly the strengths/weaknesses stated too are those stated for the baseline methodology.

(ii) Since the methodology is very specific to the baseline methodology, all the changes suggested for the baseline methodology should be appropriately reflected in the monitoring methodology.

(iii) Methodology should address the weaknesses listed in Section above.

## **B. Details of the evaluation of the proposed new methodology by the desk reviewer:**

**I. Proposed new baseline methodology (specify title here):** >>Avoiding flaring of waste gases from steel manufacturing operations and its utilization for generating thermal power thereby substituting fuel and supplying to grid.

**(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 uses approach 48 (a) - "existing actual or historical emissions, as applicable". The baseline is continued flaring of excess waste gas in absence of the project. The project proposes to capture the excess flare gas and use it to generate electricity. The waste gas could be used as fuel either in an existing plant or a new plant, thereby replacing the fuel that would have been used in these power plants. The baseline has two exclusive possibilities and, therefore, the methodology has two components - (i) methodology for replacement of fuel by waste gas in an existing electricity generation plant; and (ii) methodology for use of waste gas in a new electricity generation plant displacing electricity generation and, hence, GHG emissions, from existing electricity generation plants or likely future additions. For first alternative the GHG content of the fuel displaced is the baseline. For alternative 2, the combined margin approach suggested in ACM0002 is used to estimate the GHG emission intensity of displaced or avoided electricity.

The additionality of the project is proved using the Additionality Tools proposed by CDM Executive Board (CDM-EB).

The methodology states that leakage from project are not likely as certain restrictions are imposed on the assumption on waste gas consumption for baseline.

*b) State the approach selected:*

>>The baseline approach is 48 (a): 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:*

>>The approach chosen is presumably guided by the fact that the baseline scenario is continuation of flaring of waste gas in absence of the proposed CDM project. A more appropriate approach would have been "economically most attractive option". The central issue of decision for the project participants is

alternative use of surplus waste gas (or non use) with clear cut costs and benefits. Most of these costs and benefits are directly accrued to the project proponents.

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

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

>>No.

*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 estimation of emission reduction, from fuel substitution in existing power plant by unit waste gas use, is average emission intensity of displaced fuel multiplied by average fuel quantity replaced by use of waste gas.

The underlying rationale for waste gas supplied to new power plant is average of operating and build margin.

*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 uses the comprehensive additionality assessment tool recommended by the CDM-EB to evaluate project additionality.

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

>>The documentation considers only two alternatives, viz., flaring of waste gas or the project case, though three alternative scenarios are mentioned, stating one or more could apply (D3-Step2). All of these are not an alternative to the project activity, which is use of surplus waste for production of power. For example, alternative 3 "any new Greenfield power plant can choose and obtain regulatory permission to use any GHG intensive fuel to generate power" can happen even if the proposed CDM project is implemented.

The two crucial aspects of additionality are not adequately explained. One, what is the investment analysis procedure that is used to compare the alternatives. The application of methodology in the project context uses "purchasing power from grid after paying the wheeling charges are allocated", as stated in the CDM-PDD (B2-Step 3). No explanation is provided in the documentation on process of estimating the value. Further, cost of power generation in alternative scenario is stated but no comparison is provided to judge whether the project case results in higher cost of power generation or not.

The application of "Impact of CDM registration" needs to be further strengthened. It is not explained how the registration of project as CDM project will impact the project activity. Only a generic explanation of proposed CDM project's registration on the use of waste gas in steel sector is included.

**(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.

*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 Annex 3):*

>>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.*

>>Please refer to response in 3(b).

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 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.

Further, section D.1 CDM-NMB provides explanation of estimating the baseline emissions. These should be provided in section D6. The description uses words Stage 1 and Stage 2, which gives an impression that there are two stages to the project and baseline in Stage 1 will be case (i) and baseline in Stage 2 will be case (ii). Some of the explanations in Stage 1 are justification of why the waste gas will not be used in the baseline. Appropriate place for the justification is application of additionality steps in CDM-PDD. CDM-NMB should only provide steps of the methodology.

The additionality assessment steps of methodology are based on "Draft consolidated tools for demonstration of additionality" proposed by CDM-EB. The description of additionality assessment states the gist of recommendations without explaining how they would be applied. For example, the investment analysis step only states that financial indicator will be used to check if there is atleast one alternative that is better for investment than the project activity. There is no description of what financial indicator will be used. The CDM-PDD states that "levelized cost of electricity generation" method of comparison is used. But, here too neither details are provided on estimation procedure for levelized cost nor is it compared to levelized cost for other alternatives.

#### **(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

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

>>All data from the project including waste gas volume, waste gas consumption at power plant, and gross caloric and heat rate values of waste gas, are local.

Data for waste gas production and internal utilization for industries in the same sector, Plants synchronized to the grid in the recent 5 years, and thermal power (from fossil fuels) and hydropower generation for grid connected are regional or national.

Spatial scope of data is adequate, except for fuel specific emission factor, for which it is difficult to identify the spatial scope, as no reference for the IPCC source is provided in the documentation.

*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:*

>>All local level data will be based on average of last 3 years, except where the start date of project is less than 3 years.

All regional level data will be of 5 years vintage.

Vintage for data used to estimate OM is not stated, as per the CDM-PDD it is for year 2003-04.

Vintage of IPCC default is difficult to assess in absence of complete reference.

**(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*

>>GASES: The gases considered are not explicitly stated in methodology description (Section D5 CDM-NMB). The application of methodology indicates that only CO<sub>2</sub> is considered.

Sources: All sources of emission within the physical boundary of project; all sources of fuel consumption affected by project activity.

ii) *Physical delineation*

>>The physical boundary of the gas collection system from the steel making process.

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

>>Yes

**(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:*

>>Assumptions stated:

(1) In case of a new power generation source solely based on waste gas only baseline II will be considered: This is not an assumption but condition for use of baseline II of the methodology.

(2) Emission factor of fuel replaced will be as per the IPCC recommended values: This assumption is not completely explained, whether it refers to Baseline I or Baseline II. In any case the emission factor used in the document is in terms of tCO<sub>2</sub>/kWh, whereas, the assumption states it is for fuel replaced.

(3) Project will not result in any additional GHG emissions other than those emitted from flaring of waste gas in the baseline.

(4) The project activity will consider only surplus gas over and above that is consumed in the baseline: The assumption essentially implies that the maximum internal consumption possible is already being consumed in the baseline. Also this assumption is not consistent with the correction factor formulae, where the consumption of waste gas in baseline is assumed to be equal to average consumption for the steel sector as whole.

(5) Any additional waste gas produced during the crediting period will not be considered for CDM credits.

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

>>Partially.

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

>>The assumptions stated are inadequate. Some of the important unstated assumptions are

(i) The underlying assumption in the methodology is that IPCC default values are appropriate representative for project specific emissions factors. Further, the IPCC defaults though stated to be default values for emission factor of fuel are in actual default values for emission factors of electricity generation using a particular fuel.

(ii) The use of emission factor for electricity generation using a particular fuel incorporates the assumption on technology for production of electricity, energy content of fuel and carbon content of fuel. Therefore, use of IPCC default values implicitly assume that the technology use, energy content and carbon content for the fuel represented by IPCC default values is appropriate representative for the project case.

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

>>Data for calorific value of waste gas, heat rate, and waste gas consumed is specific to the project; waste gas generation, consumption and flaring is specific to steel industry; Emission factors for replaced fuel in power plant are sourced from IPCC. Generation data for existing grid connected power plant and those in



the build margin cohort is from regional electricity board published data.

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

>>The limited data that has been used is adequate, consistent, accurate and reliable, except the data related to emission factors and waste gas. The IPCC defaults for emission factor for displaced fuel (tCO<sub>2</sub>/GWh) is difficult to assess in absence of complete source of the data. Similarly the source of data for waste gas (energy content, waste gas generation per tonne of steel produced, and total steel production) is not stated clearly. The source of data for heat rate used to estimate electricity generation from waste gas too is not reported. Also, it is not explicitly stated whether the heat rate values are gross or net, though, the calculations indicate the nature of heat rate value.

*f) State possible data gaps:*

>>A number of data are not reported (neither in CDM-PDD nor in Annex I of the documentation) that would be needed to reproduce the baseline emission estimates as well as investment analysis. Some of the data gaps in the baseline and additionality assessment are:

(i) The amount of waste gas supplied to an existing power plant and a new power plant. Based on calculations and assumption (1) stated in Section E1 of CDM-NMB, it appears the proposed CDM project proposes to supply total waste gas available to a power plant solely based on waste gas.

(ii) Data for considering the spatial scope of the grid.

(iii) Data for estimating the correction factor.

(iv) Data for estimating the cost of power generation.

#### **(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:*

>>No

*iv) Data:*

>>No

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

>>The uncertainties discussed are with respect to the uncertainties in the project case and there is no discussion on uncertainties in estimation of baseline.

#### **(8) Leakage:**

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

>>There are three potential leakages discussed in the methodology.

(i) Leakage due to use of Hydrocarbon Fuel. The description of the leakage seems to imply that use of waste gas by power plants could result in use of displaced hydrocarbon fuels by other fuel consumers, who presently use renewable energy. It apparently Refers to market effect of lowered demand of hydrocarbon fuel due to supply of waste gas (The paragraph in Sec D8, CDM-NMB describing leakage needs to be reworded). The leakage is ignored because switch from renewable energy to hydrocarbon would require retrofitting of power generation technology which is not feasible for small generators.

(ii) Leakage due to increase in waste gas generation from project. This is addressed by imposing a restriction on quantum of waste gas for estimating the baseline emissions.

(iii) Leakage due to increase in waste gas supplied to the power plants. This is addressed through imposing

a restriction on quantum of waste gas supplied to the power plants.

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

>>The treatment of leakage requires refinement. The leakage (i) mentioned in (a) above should be analyzed from the perspective of "leakage measurable and attributable" to the project activity. Leakage (ii) and (iii) mentioned in (a) above are actually not leakages. They are more of a baseline scenario description and, therefore, constraints imposed on baseline emission reductions to prevent claims of undue reductions.

Two issues of leakage that have not been considered are (i) the emissions from construction of a waste gas collection and storage system; (ii) use of energy to collect and supply waste gas to users through the waste gas grid.

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

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

>>Significant efforts seem to have been made to develop the baseline methodology. But a few basic things need to be addressed and clarified to make the methodology more consistent and for anyone to independently reproduce the baseline using the methodology. For example, there are three possibilities mentioned for the baseline depending on how the waste gas is used, but there are no specific rules mentioned to identify the applicable baseline. The CDM-PDD too doesn't mention the exact nature of waste gas use in the proposed CDM project. From an earlier draft of CDM-PDD submitted, for the same project, it seems that the waste gas is supplied to captive generation plant for the steel unit, whereas, application of the methodology in present CDM-PDD it seems a new power plant based solely on waste gas alone is proposed.

Further, the existence of different possible baseline scenario should be consistently reflected in other steps of the methodology, like, additionality assessment. For example, for each of the three baseline scenarios possible the relevant parameter for investment analysis could be different.

Methodology also doesn't make clear the need for estimating a correction factor for baseline. Such a condition could be applicable where no historic data on waste gas generation or its use at the steel unit is available, i.e., for a green field project. Application of the methodology to the proposed CDM project gives an indication that historical data is available to fix the total waste gas generation and available waste gas surplus for supply to the power plants.

Methodology description should include complete reference and justification for choice of data and parameters along with the actual data in the CDM-PDD for completeness. Some of the data, as mentioned in 6(f) above, are neither mentioned in the CDM-NMB nor presented in the CDM-PDD.

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

>>The methodology in Section G mentions certain guiding principles for ensuring conservative methodology. But it is not explained how these guiding principles are implemented. For example, IPCC default is used as emission factor for electricity generated from any given fuel. It is not explained in the methodology how point '1', described under Conservatism in Section g, is applied to ensure that the choice of IPCC emission factor is conservative. Similarly there is no discussion on investment analysis or how the parameters chosen are conservative.

Point '3' under Conservatism is a baseline scenario issue and not related to ensuring a conservative methodology.

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

>>Strengths:

Weakness:

(i) It is not clear whether the methodology is applicable to existing steel plants or new steel plants using BOF route or both types of plants. The methodological steps should incorporate the implications of its application.

(ii) Methodology doesn't include steps for identification of possible alternative baseline scenarios and selection of the baseline scenario.



<p>(iii) The additionality assessment description is lacking in details.</p> <p>(iv) The methodology has two possible baselines but doesn't clearly state the conditions or project categories to which each of these baselines is appropriate.</p> <p>(v) It is stated that Baseline II is based on ACM0002 but a number of features of ACM0002 that make the baseline estimation robust have not been included. There is also explanation provided for doing so.</p> <p>(vii) Methodology includes only generic principals to ensure conservative baseline methodology without any specifics.</p>
<p><b>(11) Other considerations, such as a description of how national and/or sectoral policies and circumstances have been taken into account (please explain):</b></p> <p>&gt;&gt;It is stated that there is no regulation that affects choice of fuels for generating power or compulsory use of waste gases.</p>
<p><b>(12) Applicability of the proposed methodology across project types and regions (please indicate):</b></p> <p>&gt;&gt;Methodology is applicable to steel projects in countries where regulations don't exist for use of waste gas.</p>
<p><b>(13) Any other comments:</b></p> <p>a) State whether any other source of information (i.e. other than documentation on this proposed methodology available on the UNFCCC CDM web site) has been used by you in evaluating this methodology. If so, please provide specific references:</p> <p>&gt;&gt;</p> <p>b) Indicate any further comments:</p> <p>&gt;&gt;(i) The description of methodology in CDM-NMB and CDM-PDD is exactly the same. The narrative in CDM-PDD and CDM-NMB should distinguish between the fact that CDM-PDD describes the application of methodology, whereas, the CDM-NMB describes the steps of the methodology.</p> <p>(ii) The description of additionality assessment steps and its application should be reviewed since the methodology uses the "draft tools".</p> <p>(iii) A thorough editing of the CDM-PDD and CDM-NMB should be undertaken to improve the readability and consistency.</p>
<p><b>II. Proposed new monitoring methodology (specify title here):</b> &gt;&gt;Monitoring generation, storage and stabilization, and supply of waste gases from steel manufacturing operations to generate thermal power plants</p>
<p><i>In respect of the proposed new monitoring methodology, evaluate each section of annex 4 to the draft CDM PDD. Please provide your comments section by section:</i></p>
<p><b>(1) Brief description of new methodology:</b></p> <p><i>Describe new methodology:</i></p> <p>&gt;&gt;The methodology monitors data for following baseline, project and leakage parameters.</p> <p>Baseline: waste gas consumption, gross calorific value of waste gas, heat rate of waste gas, and emission intensity of GHG intensive fuel.</p> <p>Further, for the grid electricity supply component of baseline, electricity delivered to grid and emission factor for each fuel used in generating electricity is also monitored.</p> <p>Project: Monitoring of quantity of waste gas supplied to power plant, minimum quantity of waste generated, average quantity of waste gas internally consumed, and minimum quantity of waste gas flared.</p>
<p><b>(2) Key assumptions/parameters:</b></p> <p>a) List the implicit and explicit key assumptions. Identify those, if any, which are problematic and explain:</p> <p>&gt;&gt;(i) Emission factor of fuel replaced will be as per IPCC recommended values - the values are not</p>

recommended by IPCC but suggested, so the statement should be appropriately amended. Further, the emission factor is for electricity generated from the replaced fuel and not "emission factor of fuel replaced" as stated in the documentation.

The actual underlying assumption is that carbon content of replaced fuel, oxidation factor and efficiency of generation used to estimate the IPCC Emission factor appropriately represent the parameters for electricity generation from fuel replaced in the project country/region.

(ii) All other data for baseline is public/published sources - this is not an assumption but a statement of the data sources used.

(iii) Vintage of data is for last 36 months of operation or from the start of plant operations, whichever is less - this again is not an assumption but statement on vintage of data used.

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

>>The assumptions are listed in section B6, but it is not clear how these assumptions were identified.

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

>>The assumptions listed in CDM-NMM are inadequate. Some of the underlying assumptions have not been stated. For example,

(i) The relevant data for estimating emission factor for electricity generation from displaced fuel (carbon content of fuel, oxidation ratio, efficiency of technology, etc) are not available and, therefore, IPCC default values are used or IPCC default values represent a conservative and good approximation of actual emission factors.

(ii) The methodology will be applied to new steel plants that don't have sufficient data to fix the surplus waste gas available from the steel plant in the baseline. Further, it is assumed that data for all the steel plants in the country/region, irrespective of technology, will be representative of surplus waste gas availability for the steel plant in the proposed CDM project.

A number of similar implicit assumptions are made that need to be identified and explicitly stated. This is relevant because these assumptions form the basis for applicability conditions of the methodology.

### **(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):*

>>Three categories of data sources are used

(i) Project specific: monthly waste gas consumption by power plant, gross calorific value of gas, and heat rate of gas use in power generation.

(ii) Industry wide data: average waste gas supplied for power generation, minimum quantity of waste gas generated, minimum quantity of waste gas flared, and average quantity of waste gas used internally in steel plants.

(iii) Public/published sources - emission factor for fuels, generation of power from grid connected power plants, most recent plants connected to grid or under construction.

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

>>Data used is inadequate, as discussed in the next section. Source of public/published sources is not clearly stated, but given the public nature of the data it could be reliable. Absence of complete reference of emission factor for fuel makes it difficult to identify the underlying source of IPCC emission factor estimates. The emission factors for natural gas and diesel/liquid fuels might be adequate, but the emission factor for coal seems to be on the higher side.

*c) State possible data gaps:*

>>

(i) Formulae and data source for estimating the heat rate for power generation from waste gas and calorific value of waste gas is not reported.

(iii) 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:

>>No

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 annex 4):

>>Yes.

c) State whether this proposed monitoring methodology is compatible with the proposed baseline methodology described in annex 3 of the draft CDM-PDD:

>>Yes.

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

>>As the baseline methodology assumes there are no leakages, the monitoring methodology doesn't monitor data for leakage.

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

>>The QA and QC are integrated with the ISO9001:2000 system, which essentially implies that all the parameters/data to be monitored are covered by the ISO90001:2000 system.

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

>>Strength

Weakness:

(i) The monitoring methodology, as is the case with the baseline methodology, doesn't specifically state whether the methodology is for new steel plants, existing steel plants or both. If the methodology is for proposed utilization of waste from an existing steel plant there is a possibility of quantum of waste gas used for claiming credit to be more than that flared in the baseline.

(ii) The methodology uses default parameters where it is possible to monitor project specific data.

(iii) The methodology lack in clear and precise definition of data to be monitored, sources of data and other relevant information.

(iv) Methodology lacks in precise QC and QA procedures.

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

>>The methodology is applicable to projects to which the baseline methodology described in earlier section is applicable.

**(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:

>>

b) Indicate any further comments:

>>(i) A thorough editing of the document will improve the readability.

Signature of desk reviewer .....

Date: / /

Information to be completed by the secretariat	
F-CDM-NMex doc id number	
Date when the form was received at UNFCCC secretariat	
Date of transmission to the Meth Panel and EB	
Date of posting in the UNFCCC CDM web site	