

 <p style="text-align: center;">CDM: Proposed new methodology expert form (version 03) (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	Randall Spalding-Fecher
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>	
A. Evaluation of the proposed new methodologies by desk reviewers:	
I. Evaluation of the proposed new baseline methodology:	
<p>Title of new baseline methodology:>>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>>> 1.part of waste gases in facility normally used for internal heating requirements, and the remaining waste gases would have been flared</p> <p>2. the project activity does not induce diversion of waste gases required for internal usage;</p> <p>3. the proposed project activity does not result in integrated process change, except for possible associated changes due to use of waste gases for electricity generators;</p> <p>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; and</p> <p>5. the 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</p> <p>ii. Strengths and weaknesses of the methodology:</p> <p>>> Strengths: draws on ACM0002 and EB additionality tool, relatively low cost, incorporates assumptions on baseline use of waste gases</p> <p>Weaknesses: inadequate additionality test, incorrect use of operating margin, project-specific information and assumptions in methodology, project boundary needs to be corrected to match ACM0002 and clarify upstream and downstream, show calculation of electricity emissions factors rather than assume IPCC has them, unworkable correction factor based on regional rather than local data, use of absolute vs relative baselines</p> <p>iii. Any changes needed to improve the methodology:</p> <p>a. Minor changes:>> Remove all implicit project/country specific references; make project boundary description and diagram match; correct combined margin formula; clarify heat rate calculation; clarify leakage section to make this easier to understand; language edit for whole document.</p> <p>b. Major changes: >> Justify use of weighted average for OM, or change this; rewrite additionality section as suggested below; use relative emissions as baseline rather than absolute; use site specific rather than regional data to estimate gas availability and use for internal heating purposes; including relevant grid in project boundary; show calculation of plant emissions factor for grid plants, based on fuel consumption and fuel emissions factor; leakage assessment should not be based on regional averages</p>	

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 plant(s).

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

>> · Waste gases would have been flared in the absence of the project activity;

· Waste gas composition and heat containing characteristics are measurable;

· Part of the waste gases generated during the steel manufacturing operations are used for meeting internal heating requirements within the steel manufacturing industry; and

· Project activity will not induce diversion of waste gases required for internal usage for generation of power and replacing the shortfall with other energy sources.

Note: need to add points 3,4 and 5 from baseline methodology

- ii. Strengths and weaknesses of the methodology:

>> The major problem with this methodology is that is primarily concerned with collecting baseline data prior to project implementation, not with ongoing monitoring of emissions reductions. It is not a monitoring plan but an ex-ante baseline data collection plan.

- iii. Any changes needed to improve the methodology:

a. Minor changes:>> 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

b. Major changes: >> Remove all data that is collected solely for ex-ante baseline calculation. Clarify leakage. Clarify whether OM is updated before the renewal of the crediting period. 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.

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 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:

>> a - existing or historical emissions

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:

>> yes, this is clear, as explained in B.1.(1) a)

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?

>> The additionality section needs to be rewritten. While the proponents state that this draws on CDM Meth panel guideline (which should be replaced by reference to the EB report with the approved tool), the text in section D.3. is much closer to a project specific justification of additionality rather than a methodology. The fact that it states "it may be satisfactorily concluded that the project activity is not a baseline scenario, and thus it is additional" means that all projects using this methodology would automatically be considered additional. This is not correct.

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

>> This is not adequate, given the concerns raised in the previous questions. The simplest solution would be to reference the EB tool and not include any more text in this section in the methodology. The text that is currently in the section could be used in the PDD to justify additionality of a particular project. If the proponents believe that more explanation is needed of how to apply the EB tool to this sector, then they could include guidance in section D.3 - for example, they could suggest what the typical scenarios would be under step 2, or highlight the kinds of regulation to be examined in step 1. None of the text, however, should be project specific or lead to conclusions about whether a given project is additional - this should only happen with the application of the methodology.

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

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

>> There are some problems with the description. On page 5 under "case 1", it states that "the electricity replaced is not significantly large..." but this is not justified, not is it part of the applicability requirements of the methodology. Similarly, on page 6 under Operating Margin, it states that "in view of the energy deficit in the local grid as well as the insignificant size of it electricity contribution to the grid", which is also not justified and is project specific information that should not be in a methodology. In the next paragraph, "since the power cost with waste gas shall be less than the current tariff...", this is not justified and is a project specific assumption. The 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. The fourth paragraph under build margin ("the BM effect") is also not clear and sounds project specific. Section D.2 is not adequate.

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):

>> Yes, as long as the recommended changes are made

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.

Please explain:

>> The additionality test needs to be revised, and 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. One problem with the baseline calculations, however, is the use of fixed baseline emissions in section D.6 formula (1) and below (3.2). This assumes that future production levels will be the same as historical levels, which is not correct.

The correction factor is also problematic, because it is expressed as absolute quantities across the steel sector, rather than relative use at the actual project site. Absolute volumes of gas across a range of facility sizes is meaningless, the using sector averages is problematic unless comparable facilities are very carefully defined. It would be better to use the share of gas used for internal heating purposes vs flared, or the relative gas used internally (i.e. SCM of gas used for internal heating/tonne of steel produced) for the actual facility in question. The better way of correcting the baseline to prevent crediting for increases in steel production outside of the scope of the project activity is to simply cap absolute baseline emissions, but use a relative baseline (e.g. tCO₂/kWh for displaced power, either local or grid). It is not clear, however, why this cap is necessary.

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

>> It is not appropriate to use regional steel sector data to determine the baseline correction factor. The baseline should reflect the historical characteristics of the facility used as the project site. The relevant grid should also 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, 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

>> CO₂ from fossil fuel combustion in local or grid power plants only

ii) Physical delineation

>> The description in section D.5 and the diagram do not entirely match. It is unclear what "one step upstream and one step downstream" means in the diagram. It is also not clear whether "process emissions on the site of the project activity" means something other than CO₂ emissions from fossil fuel combustion. The points about direct off-site emissions and indirect off site emissions are not clear, and not directly accounted for in the section on leakage.

b) Indicate whether this project boundary is appropriate:

>> No - the grid power stations should be included, as per ACM0002, and clarification should be provided on the points raised in the previous question.

(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:

>> In terms of the combined margin, the methodology assumes that using the weighted average emissions factor for the grid is appropriate, which is problematic. The use of absolute baselines both for local power production and grid power production is also problematic.

The formula for the combined margin (3.2) should show the weightings of the OM and BM.

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

>> No. As mentioned above, on page 5 under "case 1", it states the "the electricity replaced is not significantly large..." but this is not justified. Similarly, on page 6 under Operating Margin, it states that "in view of the energy deficit in the local grid as well as the insignificant size of its electricity contribution to the grid", which is also not justified. The next paragraph, "since the power cost with waste gas shall be less than the current tariff...", is not justified and is a project specific assumption. The 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 question. In addition, in baseline I and II, the methodology refers to "EF_IPCC_{i,j}" as "emissions factor as per IPCC for CO₂ from fuel i (iCO₂/GWh) at power sources j" - but IPCC does not have emissions factors for power generation. The formula for the combined margin (3.2) should show the weightings from the OM and BM emissions factors.

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

>> Data on grid connected power generation is from official statistics (note - the meth should not say "regional electricity boards" since not all countries have these). Data for correction factor is from regional steel industry sources. Emissions factors for grid plants is from IPCC, as is emissions factors for fuels. Quantity of gas consumed for power and characteristics of gas are from project proponent, as is the efficiency/heat rate of the gas for generating power.

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

>> No. Emissions factors for grid plants are not from IPCC, but should be calculated from fuel use, oxidation factor and fuel emissions factor. Data for correction factor should be based on existing local facility. Sources of efficiency data for project power plant should be specified more clearly (e.g. manufacturer's rating), and also included in monitoring plan - or rather include project fuel use and power

output in monitoring plan.

f) State possible data gaps:

>> Need data on fuel consumption in grid power stations, and emissions factor and oxidation factor of fuels used in grid and project power plants.

(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 rules out leakage due to the displaced fossil fuels replacing renewables at other generators, given the high cost of this switch. The methodology states that increases in the rate of gas production in the facility (per unit of steel production) will not be included in the baseline. Finally, the methodology does not allow the use of a higher share of waste gas for power production, in which case another fuel would have to be used for internal heating, by not allowing gas use for internal heating to be lower than the sectoral average.

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

>> The language in this section is difficult to understand. It is not clear why an increase in the rate of gas production should not be able to earn emissions credits, as long as sufficient gas is still used for internal heating purposes and this gas would have been flared but is not displacing fossil fuel use elsewhere. The rationale for this needs to be explained. Secondly, the use of sectoral averages is problematic, given variations in manufacturing processes and across countries, and so this should be replaced by historical use of gas at the project facility. How this principle is implemented in the correction factor also needs to be explained more clearly.

(9) Transparency and "conservativeness":

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

>> For the most part, although some areas such as the leakage explanation, the additionality test, and rationale for and use of regional industry data, are not clear or transparent. The correction factor rationale and detail is difficult to understand.

b) State whether the baseline methodology is conservative:

>> The explanation of conservativeness given in section G is not clear, and sounds more like a prescription for writing a methodology rather than the qualities of this particular methodology. 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. Using regional data for share of

gas going to different uses is also not necessarily conservative.
<p>(10) Potential strengths and weaknesses of the proposed baseline methodology (please explain):</p> <p>>> Strengths: draws on ACM0002 and EB additionality tool, relatively low cost, incorporates assumptions on baseline use of waste gases</p> <p>Weaknesses: inadequate additionality test, incorrect use of operating margin, project-specific information and assumptions in methodology, project boundary needs to be corrected to match ACM0002 and clarify upstream and downstream, show calculation of electricity emissions factors rather than assume IPCC has them, unworkable correction factor based on regional rather than local data, use of absolute vs relative baselines</p>
<p>(11) Other considerations, such as a description of how national and/or sectoral policies and circumstances have been taken into account (please explain):</p> <p>>> 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</p>
<p>(12) Applicability of the proposed methodology across project types and regions (please indicate):</p> <p>>> If the information that implicitly reflects the Indian situation (e.g. in the additionality section, relative cost of power sources, size of project vs size of grid, etc) is removed, then this methodology could apply in any country and any steel facility, as long as the conditions in A.3 are met.</p>
<p>(13) Any other comments:</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>>> ACM0002, EB tool for assessment of additionality</p> <p>b) Indicate any further comments:</p> <p>>> Formulae need to be numbered correctly. Document needs a language edit.</p>
<p>II. Proposed new monitoring methodology (specify title here): >> Monitoring generation, storage and stabilization, and supply of waste gases from steel manufacturing operations to generate thermal power plant(s).</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>(1) Brief description of new methodology:</p> <p>Describe new methodology:</p> <p>>> 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</p>
<p>(2) Key assumptions/parameters:</p> <p>a) List the implicit and explicit key assumptions. Identify those, if any, which are problematic and explain:</p> <p>>> 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.</p> <p>b) State whether the key assumptions are arrived at in a transparent manner:</p>

<p>>> They are not transparent, and it is not clear whether this data is monitored ex-post, and, if so, how it is used.</p> <p>c) Give your expert judgement on whether the assumptions/parameters are adequate:</p> <p>>> 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.</p>
<p>(3) Data sources and data quality:</p> <p>a) Indicate which data sources are used and how the data are obtained (e.g. official statistics, expert judgement):</p> <p>>> 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.</p> <p>b) Give your expert judgement on whether the data used are adequate, consistent, accurate and reliable:</p> <p>>> 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.</p> <p>c) State possible data gaps:</p> <p>>> Actual gas consumption and characteristics. If OM is to be revised before renewal of crediting period, will need fuel consumption data for grid plants.</p>
<p>(4) Assessment of the description of the proposed methodology and its applicability:</p> <p>a) State whether the proposed methodology has been described in an adequate manner:</p> <p>>> It is well described, but the same as the baseline meth - 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.</p> <p>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):</p> <p>>> No, it needs to be revised as suggested in this review.</p> <p>c) State whether this proposed monitoring methodology is compatible with the proposed baseline methodology described in annex 3 of the draft CDM-PDD:</p> <p>>> Only if revised as suggested in this review</p>
<p>(5) Leakage (please elaborate, if appropriate):</p> <p>>> 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</p>
<p>(6) Quality assurance and control procedures (please explain):</p> <p>>> 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.</p>
<p>(7) Potential strengths and weaknesses of the proposed monitoring methodology (please explain):</p> <p>>> This methodology must be substantially revised before it is useful - in its current form it is not a monitoring methodology.</p>
<p>(8) Applicability of the proposed methodology across project types and regions (please</p>

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:

>> [ACM0002](#)

b) Indicate any further comments:

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Signature of desk reviewer

Date: / /

Information to be completed by the secretariat

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