 <p style="text-align: center;">CDM: Proposed new methodology expert form (version 04) <i>(To be used by methodology experts providing desk review for a proposed new methodology)</i></p>	
Name of expert responsible for completing and submitting this form	Sivan Kartha
Related F-CDM-NM document ID number	NM0104
<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>	
A. Evaluation of the proposed new methodologies by desk reviewers:	
I. Evaluation of the proposed new baseline methodology:	
<p>Title of new baseline methodology:>> "Use of renewable reducing agents for the production of pig iron and steel."</p>	
<p>i. Conditions under which this methodology is applicable to other potential projects (e.g. project type, region, data availability): >> See applicability conditions (Section A.3, p. 2)</p> <p>ii. Strengths and weaknesses of the methodology: >></p> <p>Strengths:</p> <ul style="list-style-type: none"> - use of additionality tool - conservativeness of certain of the assumptions (see 9 below.) - better definition of sensitivity study for investment analysis than most other methodologies <p>Weakness:</p> <p>The main weakness of this methodology arises from the fact that it is dealing with a particularly difficult type of project, i.e., projects where the activity is essentially a continuation of BAU activity.</p> <p>Such types of activities obviously present an especially large baseline and additionality problem. Given that the project activity is ongoing (for years or even decades, in the case of NM0104) today is still widespread (within the Brazilian iron and steel sector, in this case), the project therefore <i>a priori</i> appears to be feasible and viable. It is thus a particularly difficult challenge to convincingly and conclusively demonstrate additionality.</p> <p>1) The methodology must focus therefore clearly on highlighting <i>changes</i> that have made the activity no longer feasible and viable. Generic, static investment and barriers analysis does not suffice.</p> <p>In the context of the financial analysis, it should highlight changed financial quantities that have suddenly rendered the project no longer attractive. In the context of the barrier analysis, it should focus on explaining and documenting barriers that have become suddenly more significant.</p> <p>If these changes do not coincide very closely with the date of the project implementation, the methodology should require the project proponent to explain why. (E.g., the Fiset financial incentives for plantations were withdrawn in 1989, but even by the 2001 "implementation date" of</p>	

the project, V&M had not shifted to coke.)

2) Also, the methodology must carefully define the common practice test to determine whether the "avoided fuel switch" project is in fact avoiding an inevitable fuel switch. As the NM0104 applies the common practice test, it somehow does not interpret the 25% percent penetration of charcoal in the pig-iron industry to be sufficient to consider it "common". This demonstrates that a more refined common practice test must be applied to these types of projects. The objective, as is the typical objective of a common practice test, should be to show that the project activity (i.e., continuing to use charcoal) is **NOT** common practice. (On the contrary, the Brazil data seems to be showing that continuing to use charcoal is quite common, and that moreover, there are new facilities that are being implemented with charcoal.)

3) If it cannot be determined that the fuel switch is inevitable (i.e., all pig-iron facilities are shifting away from charcoal), then the project's additionality is not evidenced by common practice test. In this case, a partial crediting (i.e., discounting by the fraction of industries still not yet shifted away from biomass?) might be the absolute most that is warranted. (With continued monitoring, the credits could be increased over time.)

For other weaknesses, see below.

- iii. Any changes needed to improve the methodology:
 - a. Minor changes:>>
 - b. Major changes:>> Greater focus on sectoral changes that substantiate the claim that a BAU activity has suddenly become additional. More adequate treatment of leakage in the baseline. (See more below.)

II. Evaluation of the proposed new monitoring methodology:

Title of new monitoring methodology: >> "Monitoring emission reductions from using a renewable reducing agents for the production of pig iron and steel."

- i. Conditions under which this methodology is applicable to other potential projects (e.g. project type, region, data availability):
 - >> See applicability conditions (Section A.3, p. 2)
- ii. Strengths and weaknesses of the methodology:
 - >>
- iii. Any changes needed to improve the methodology:
 - a. Minor changes:>>
 - b. Major changes:>> More adequate treatment of the sourcing of renewable biomass. More adequate treatment of leakage.

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

I. Proposed new baseline methodology (specify title here): >> "Use of renewable reducing agents for the production of pig iron and steel."

(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:

>> Financial analysis of pig-iron facility to compare operation on charcoal to operation on coke, supplemented by barrier analysis.

b) State the approach selected:

>> The methodology "is an interpretation of" 48(b)

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 selected is appropriate, but the application in this methodology is not obviously adequate.

(2) Basis for determining the baseline scenario:

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

>> Yes. (Section D.3)

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

>> Financial analysis of pig-iron facility to compare operation on charcoal to operation on coke, supplemented by barrier analysis.

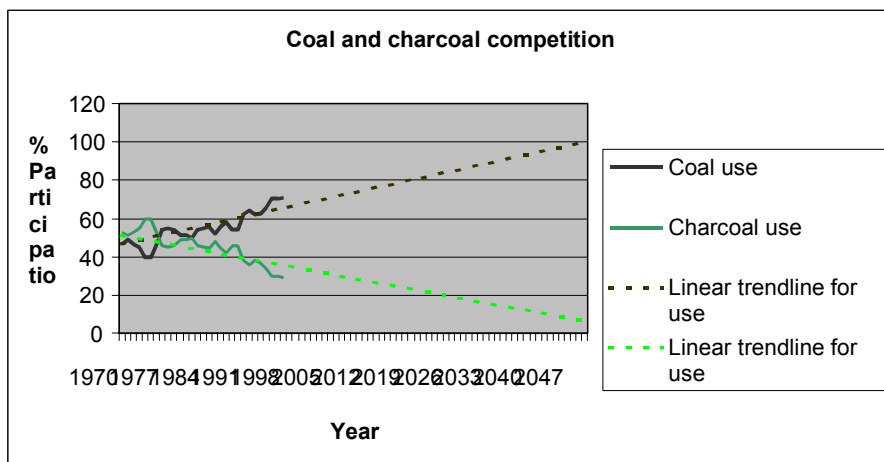
c) State whether the documentation explains how, through the use of the methodology, it can be demonstrated that a project activity is additional and therefore not the baseline scenario. If so, what are the tools provided by the project participants?

>> The methodology uses an (adapted) Additionality Tool.

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

>> The main problem with the baseline procedure is the lack of a sufficiently detailed methodology for taking into account the charcoal suppliers. Since the activity of the charcoal suppliers in the baseline could possibly completely offset the claimed reductions, this is an extremely important issue and must be addressed in detail. (See further comments below, regarding leakage.)

The additionality procedure might be adequate, especially providing the common practice test is properly applied. (It does not appear to have been properly applied in the PDD. Despite data showing that there is still significant use of charcoal in the pig-iron industry, and despite having commented that a simple extrapolation of trends would suggest that the pig-iron industry will still be using charcoal until as late as 2050, the project proponents nevertheless conclude that there is not sufficient similar practice to call into question the project's additionality. (Note, the table wrong Figure 5 is given in the NM0104 PDD. The figure below, taken from a document found on the PCF website titled *Annex 1: Identification and Mitigation of Plantar Project's Potential Risks* contained the correct one.) This is a flawed application of the common practice test. The project proponents claim that certain sectoral circumstances are causing them to shift to coke, and that these circumstances apply to the entire sector, yet clearly many producers are not shifting rapidly.) In fact, Pedro's comments about there being very recent charcoal-using pig iron mills. The information from Maldonado in his review of NM0029 showing that new charcoal-using pig-iron facilities are being created is highly relevant here. As are comments regarding the changing exchange rates and corresponding decreasing attractiveness of imported coal.



Other issues:

The investment analysis MUST be done on an appropriate time horizon. If the main additionality argument has to do with the cost of plantation re-establishment, and the plantation has a 21 year lifetime (over three harvesting cycles, presumably), then the financial calculation must be at least this long or it unfairly disadvantages the charcoal-using calculation. (This is not how the methodology currently reads.)

As the financial calculation in the PDD shows, the investment analysis hinges on an NPV calculation that is dominated by the upfront cost of plantation establishment and the revenues from selling the plantation. The results will therefore be highly sensitive to the discount rate, which must therefore be very well documented and included in the sensitivity analysis.

The revenues from selling the plantation are also critical (75% of the NPV!!) and must be very well substantiated, and included in the sensitivity analysis.

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

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

>> For the most part, the methodology is fairly clear, readable, and detailed.

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):

>> It is not clear whether the methodology presented is adequate for demonstrating the additionality of a BAU project activity. (See comments above.)

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.

>> Possibly, but then again it might not.

Please explain:

>> It is not clear that this methodology is sufficiently detailed and rigorous to adequately apply to project activities that are ongoing BAU activities.

(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):

>> Generally, the formulas are generic and can be applied elsewhere.

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

>> The methodology uses national sector data, as is appropriate.

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:

>>

To calculate uncertainties and perform sensitivities, the methodology uses three year historic, which is appropriate.

Data in the PDD are not always up to date with the year in which the project decision was made. Data should be *at least* that recent, and preferably up to the present.

(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, CH₄, N₂O from charcoal (incl. transportation). CO₂, N₂O from coke (not incl. transportation).

ii) Physical delineation

>> Charcoal/coke use in pig-iron production. Emissions associated with forestry.

b) Indicate whether this project boundary is appropriate:

>> The inclusion of the forestry is appropriate, however, the forest sources are NOT explicitly included in the baseline and additionality procedures. They are included only incidentally under the leakage section. This is potentially deeply problematic. (See further comments under leakage.)

(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:

>> See section E.1. Also...

- The only possible scenarios for the pig-iron facility are to use charcoal and coke. This is presumably correct, though it should be explicitly stated. (Is syngas not used?)

- Pig-iron production is the same in the charcoal and coke scenarios, and credit should be given for all production, even if it exceeds historic production. (p. 19)

- Charcoal originating from "renewable" plantations can be confidently certified.

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

>> See comments under (a)

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

>> The first two are probably reasonable, but should be explicitly stated.

The third is more questionable. (See comments on monitoring methodology.)

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

>> See tables B.2.1 and B.2.3.

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

>> Most data is from the project developer. Whether it is adequate, consistent, accurate, reliable will depend on the reliability of the project developer and verifier. This is impossible to know at this point. Some data is from "literature", but should be cited.

f) State possible data gaps:

>> The biggest data gap pertains to the certification of the charcoal suppliers as "renewable". (See comments under monitoring methodology.) There is a well-documented debate over whether the V&M eucalyptus plantations are indeed renewable and whether the chain of custody is clearly recorded. (See *Evaluation Report of V&M Florestal Ltda., and Plantar S.A. Reflorestamentos, both certified by FSC – Forest Stewardship Council*, (M.A. Soares dos Santos Andre, et al.) This is a major concern, since the claimed project reductions rely on the ability to verify and document that the charcoal fuel is in fact renewable, which is difficult to do in a context where non-renewable charcoal production is still common. There is ongoing discussion within the EB about the definition of "renewable biomass" Once this definition is settled, then the proper data requirements for verifying whether biomass is renewable can be determined. Until then, any baseline/monitoring requirements should be considered provisional.

(7) Assessment of uncertainties:

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

i) The basis for determining the baseline scenario:

>> The methodology requires a sensitivity analysis, as is appropriate.

However, the methodology should also require that all parameters are provided with a range, so that the degree of uncertainty can be made transparent.

ii) Algorithms/formulae:

>> As in (i)

iii) Key assumptions:

>> No

iv) Data:

>> No

b) State whether the uncertainties presented are reasonable:

>> The treatment in this methodology of the uncertainties related to leakage is not adequate. (See discussion below.)

(8) Leakage:

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

>> The key source of leakage is the baseline activity of the charcoal supplier for the project activity. The proposed methodology for dealing with this is given on p. 17.

(A relatively minor source of leakage is the upstream emissions from coke production and transport. This is dealt with conservatively by excluding it from calculation of baseline emissions.)

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

>> The proposed methodology does not adequately address leakage.

As Schneider pointed out in his comments to NM0029, it is extremely important to capture the market leakage effects of any project that claims to be promoting the consumption of a fuel that is supply-constrained, particularly in a situation where there is a high degree of fuel substitutability (as is the case in this project, since switching costs are a small fraction of fuel costs). This issue should not be underestimated. (Note, Schneider's analysis of the interaction of supply and demand was somewhat idealized and not exactly applicable to this case, but his general point stands nonetheless.)

This is of major consequence, as improper treatment of leakage could completely offset all claimed reductions. For example, the claimed reductions would be completely offset if, in the baseline situation, the charcoal supplier were to simply shift to supplying a different pig-iron facility. If, as the project proponents have claimed, plantation wood is undersupplied to the local market and pig-iron facilities are closing as a result of lack of charcoal, then the transfer of the charcoal to another pig-iron facility is a quite likely baseline situation. The methodology must therefore include a much more detailed and rigorous treatment of the source of charcoal. (This is whether charcoal is being sourced from company plantations or from an independent producer.)

(In the PDD, the charcoal source is the company's own plantations, and the project developer acknowledges that significant leakage would result if the company's plantation assets were to continue producing charcoal in the baseline. Even their claim that the buyer of the plantation assets would "most likely" be a major pulpwood consumer has leakage ramifications; in a market which is undersupplied with plantation wood, the major pulpwood consumer could likely be pushing out charcoal consumers.)

If this major affect is to be addressed properly, the charcoal supplier must be treated a level of detail and rigour much more comparable to the pig-iron facility, especially in a case where the plantation assets belong to the project developer (in which case the charcoal supply should be considered within the project boundary). Arguably, there should be no credit for any charcoal purchased from independent suppliers to the charcoal market, as the likelihood of complete market leakage is very high given that the PDD states that pig iron mills are shutting down because of lack of charcoal. The leakage procedure states that the project proponent must show this is not happening by "showing that the levels of charcoal purchased by the company has not increased in relation to *previous levels before the project implementation*." This is simply an incorrect comparison, as the proper comparison is relative to the baseline scenario, in which *no charcoal is purchased*.

(9) Transparency and "conservativeness":

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

>> The methodology is transparent for the most part. Some parts are refreshingly transparent. (E.g., use of the table for variables.)

The main lack of transparency comes with dealing with leakage.

b) State whether the baseline methodology is conservative:

>> Several aspects are conservative:

- Charcoal coming from third parties is assumed to be non-renewable, unless there is a clear demonstration to the contrary.
- Upstream emissions from coal are ignored.
- No credit is taken for the plantation carbon stocks. However, depending on the baseline situation for the source of the charcoal, this could be very non-conservative assumption. (For example, if the plantation land were left to convert back to natural forest.)
- No credit taken for CH₄ or N₂O from coke production.
- Assumption of "least advanced technology" for charcoal production for CH₄ emissions.
- the procedure for the sensitivity analysis seems conservative
- chain of custody requirement for documenting renewable charcoal.

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

>>

strengths: see above comments given under (I) above.

weakness: in addition to comments given under (I) above.

- inadequate treatment of BAU project activity --specifically with regard to highlighting *changes* in conditions and propoer use of common practice test.
- inadequate treatment of leakage
- analysis depends on subjective management decision, and unpredictable long-term costs differentials.

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

>> Taken into account automatically by considering local project circumstances.

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

>> Perhaps under situations where there is an incontrovertible and well-documented wholesale shift to another fuel.

(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:

>> NM0002 and NM0029: PDD, NMB, NMM, final recommendation, desk review, and public comments.

Evaluation Report of V&M Florestal Ltda., and Plantar S.A. Reflorestamentos, both certified by FSC – Forest Stewardship Council, by M.A. Soares dos Santos Andre, et al.

Annex 1: Identification and Mitigation of Plantar Project's Potential Risks (found at PCF website)

b) Indicate any further comments:

>>

II. Proposed new monitoring methodology (specify title here): >> "Monitoring emission reductions from using a renewable reducing agents for the production of pig iron and steel."

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

(1) Brief description of new methodology:

Describe new methodology:

>> The monitoring methodology is based on monitoring of the quantity of reductants consumed, carbon intensity, (derived from CO2 emissions during carbonization/coking, CH4, N2O, transport)

(2) Key assumptions/parameters:

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

>> While it is good that NM0104 takes credit only for charcoal for which a chain of custody can be traced, and the original supplier must be "renewable", there is a key assumption pertaining to the ability of the charcoal suppliers to be verified as "renewable".

There is no method offered in the NMM regarding this verification. In particular, there is a well-documented debate over whether the V&M eucalyptus plantations are indeed renewable and whether the chain of custody is clearly recorded. (See *Evaluation Report of V&M Florestal Ltda., and Plantar S.A. Reflorestamentos, both certified by FSC – Forest Stewardship Council, (M.A. Soares dos Santos Andre, et al.)* This is a major concern, since the claimed project reductions rely on the ability to verify and document that the charcoal fuel is in fact renewable, which is difficult to do in a context where non-renewable charcoal production is still common. It is therefore not clear whether FSC certification is sufficient.

Indeed, FSC certification does not necessary comply with the EB definition of renewable, since there is in fact ongoing discussion within the EB about the definition of "renewable biomass". Once this is definition is settled, then the proper data requirements for verifying whether biomass is renewable can be determined. Until then, any baseline/monitoring requirements should be considered provisional.

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

>> Nothing information is provided about the monitoring and verification of sustainable charcoal production.

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

>> More needs to be said about the monitoring and verification of sustainable charcoal production.

(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):

>> See Tables B.2.1 and B.2.3

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

>> Most data is from the project developer. Whether it is adequate, consistent, accurate, reliable will depend on the reliability of the project developer and verifier. This is impossible to know at this point. Some data is from "literature", and should be explicitly cited.

c) State possible data gaps:

>> The main data gap is with regard to monitoring the sustainability of the charcoal production (as discussed above).

There should also be continued monitoring of the sector, to determine whether there is any significant switching to charcoal. Given that initial switching costs are dominated by fuel costs, this is quite conceivable, given uncertain future events such as exchange rate fluctuations, plantation land availability and competition, etc.

(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:

>> Yes.

b) State whether the proposed methodology is appropriate for the referred proposed project activity and the referred project context (described in Sections A - E of the draft CDM-PDD and submitted along with CDM-NMM):

>> No, because of points mentioned above.

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

>> No, because of points mentioned above.

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

>> The methodology is not adequate here. It mentions variables 25 and 35 only, but 35 does not appear to be related to leakage. There is no monitoring aspects related to the main leakage aspect mentioned in the review above of the NMB -- i.e., leakage with regard to the likely dispensation of the plantations in the baseline. For example, is there evidence in the wider charcoal market that the plantation would not have continued to supply charcoal in the baseline, (...or would not have continued to supply a pulpwood consumer thereby allowing another charcoal consumer to maintain its supplies)

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

>> If possible, application of appropriate ISO standards would be preferable.

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

>> weaknesses;

- lack of explanation of the viability and process for monitoring and verification of sustainable biomass production.

- lack of explanation or process for monitoring the charcoal market to support the central claim that the charcoal would not have supplied pig-iron producers in the baseline, who are instead needing to shift to coke.

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

>> Perhaps under situations where there is an incontrovertible and well-documented wholesale shift to another fuel, if it were amended to account for points raised here.

(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:

>> From NM0002 and NM0029: PDD, NMB, NMM, final recommendation, desk review, and public comments.

Also, *Evaluation Report of V&M Florestal Ltda., and Plantar S.A. Reflorestamentos, both certified by FSC – Forest Stewardship Council*, by M.A. Soares dos Santos Andre, et al.

and,

and,

PCF; *Annex 1: Identification and Mitigation of Plantar Project's Potential Risks* (found at PCF website)

b) Indicate any further comments:

>>

Signature of desk reviewer ...Sivan Kartha.....

Date: 5/ 22 / 2005

Information to be completed by the secretariat

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