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Response to issues raised in requests for review
Use of Charcoal from Renewable Biomass Plantations as Reducing Agent in Pig Iron Mill of ArcelorMittal Juiz de Fora, Brazil (8238)

We refer to the issues raised in the three requests for review received for the registration request for project activity 8238 "Use of Charcoal from Renewable Biomass Plantations as Reducing Agent in Pig Iron Mill of ArcelorMittal Juiz de Fora, Brazil".

The requests for review request DNV to

"1) The project activity has referenced to three milestone activities (i) start date 12 August 2005, (ii) CDM contract is signed in 2007, and (iii) GSC - PDD publication by 6 July 2010.The time period between each milestones activities is 2.4 and 2.7 years respectively.

The DOE shall further substantiate how continuing and real actions were taken to secure CDM status for the project in parallel with its implementation considering in particular that

- *(a) activities listed like NM 0110 which are not directly relevant to the project activity mile stone;*
- *(b) CDM consultancy contract being signed after physical implementation of the project activity ;*
- *(c) the PNM of the methodology (Jul 2008) is submitted eight months later to the physical implementation of the project activity (Dec 2007);*

Please refer to VVM v.01.2, Para 102 (b) Reliable evidence from project participants that must indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation.

2) The project activity has demonstrated barrier analysis primarily on the credit lines for the plantation activity and
experience of the farmers in Zone Mata region (where new cultivation of sepcies occurs).

The DOE shall further substantiate:

(a) how the barriers validated is in line with the applied methodology i.e if barrier analysis is used, then "the barrier analysis may be applied to the integrated iron ore reduction system including:

(1) The production and supply of the renewable reducing agent (establishment of plantations and production of charcoal); and (2) The industrial process (iron ore reduction using a blast furnace technology);"

(b) furthermore it shall be demonstrated when the project is covering many hectares how barriers like lack of previous experience in eucalypt cultivation and their inability to provide loan related one region (Zone mata) is representative for the whole region and also some piece of land are re-cultivation with same species (eucalyptus).

Please refer to VVM v.01.2, Para 115 (a), EB 50, Annex 13, para 9, and also the requirements for additionality in the methodology AM 0082, V.0.1.

3) The DOE shall further substantiate how it has validated that the project activity complies with applicability condition specified in AM 0082, version 01 "Guidance for the situation when the plantation (or part of) is covered under an A/R CDM project activity" in particular

(a) considering that the validation report did not specify anything related to this applicability conditions on whether it is integrated project (A/R and AM 0082) or stand alone AM0082 project ;

(b) demonstration of prior CDM consideration includes plantation activities (A/R)

and

(c) barrier analysis is restricted only to the plantation activities.

Please refer to VVM v. 01.2, para 71, the DOE shall determine whether the choice of methodology is justified and the project participants have shown that the project activity meets each of the applicability conditions of the approved methodology or any tool or other methodology component referred to therein."

The request for reviews refer to Paragraph 71, Paragraph 102 (b) and Paragraph 115 (a) of VVM version 1.2, refer to EB 50, Annex 13, Paragraph 9, and also to the requirements for additionality in the methodology AM 0082, V.0.1.

In accordance with paragraph 82 (b) of the CDM Project Cycle Procedure (version 03.1), DNV selects to not respond to this RfR by revising the validation report, but selects to *respond in writing by addressing why no revisions to the PDD and/or validation report are necessary.*

As demonstrated below, it is DNV's opinion that the issues raised in the requests for review were adequately addressed in the PDD and DNV's validation report submitted for registration.

Prior consideration

The PDD presents several real actions that follow the Guidelines on the demonstration and assessment of prior consideration of the CDM (version 04), which are presented in the Table 12 of section B.5 of the PDD.

Between the items (i) starting date (reference /7/ of the validation report) and (ii) consultancy contract with Instituto Totum (reference /32/ of the validation report), two meetings of the Arcelor Mittal's Board were held for monitoring of the PBS (Program Belgo of Sustainability – that has the carbon projects involving forest plantations and charcoal production –Figure 13 of the validation report – as one of its anchors). The meetings were held in December 2005 and February 2006 (reference /5/ of the validation report) and for which a report was presented regarding the PBS' status in May 2006 (reference /4/ of the validation report). These meetings qualify as "*other documented communications*" as defined in the Guidelines on the demonstration and assessment of prior consideration of the CDM (version 04), item 7, page 2. The evidences of these meetings were considered as evidence after DNV has assessed and confirmed the authenticity of these communications through crosschecking and interviews. It has been also observed the fact that the gap between documented evidence is greater than 2 years but less than 3 years. Therefore DNV validated that continuing and real actions were taken to secure CDM status for the project activity. The positive validation opinion was based on the context of the evidence and information assessed.

Also, the publicly available ArcelorMittal's Sustainability Reports for the year 2006 (www.arcelor.com.br/relacoes_investidores/relatorios_stakeholders/anual_social_ambiental/pdf/relatorio_sust_2006.pdf - page 39) and for the year 2007 (www.arcelor.com.br/relacoes_investidores/relatorios_stakeholders/anual_social_ambiental/pdf/relatorio_sust_2007.pdf - page 36) express the company's environmental engagement in pursuing CDM project activity registration.

Between the items (ii) consultancy contract with Instituto Totum (reference /32/ of the validation report), which was signed on February 2008 and not in July 2007 as stated in the question, as mentioned above, and (iii) PDD publication on 6 July 2010, the following actions occurred:

- Totum's Commercial Proposal (qualify as "*other documented communications*" as defined in the Guidelines on the demonstration and assessment of prior consideration of the CDM (version 04), item 7, page 2) was issued in July 2007 (reference /31/ of the FVR);
- "Workshop about the decisions of COP 13" in order to evaluate its impacts on the PP's project activities and strategies was held in December 2007 (reference /5/ of the FVR);

Moreover, NM0278 was submitted on 2 July 2008 (http://cdm.unfccc.int/methodologies/PAmethodologies/pnm/byref/NM0278). This NM became the methodology AM0082 on 22 July 2009 and made it possible to proceed with the PDD development. The methodology was submitted by Plantar representing the members of the Technical Group for Renewable Charcoal. The decision to submit the methodology in the name of Plantar was based on the fact that Plantar was supported by World Bank by the time. The same methodology had been submitted twice before by V&M and could have been by any other renewable charcoal producer that was part of the "Technical Group". The evidence AMJF07 of the timeline is a Minute of a Meeting held by the Technical Group (represented by Belgo, Plantar e PwC) with the Brazilian DNA's secretary on 8 June 2005 (reference /20/ of the validation report).

- it was negotiated an "Indicative Term Sheet for Transaction of Emission Reductions Certificates", in 2009;
- study "Land Eligibility Study for PPF project according CDM-UNFCCC rules" (reference /29/ of the validation report) was elaborated by a third part company (Geoconsult), in 2009, which is a georeferenced study used to confirm that the land plantations comply with the applicability conditions of methodology AM0082 version 01, related to land use;
- draft versions of the PDD were developed by Totum until its final approval by the PP and between February and April 2010 (reference /6/ of the validation report), the "Letters from stakeholders regarding the stakeholder consultation" were sent in order to comply with the Brazilian's DNA resolution nº 07/2008.

The submission of NM110 is not directly relevant for the prior CDM consideration of the project and thus the timeline of relevant events. However, the methodology mentioned is NM0278 of 2 July 2008, as described above.

The contract between the Instituto Totum Consultancy and ArcelorMittal was signed in February 2008 (reference /32/ of the FVR). However, since 2002 the PP had been advised by the consultancy PricewaterhouseCoopers (PwC). Several evidences were presented by the PP and cross-checked to confirm it (reference /25/ of the validation report), as follows:

- *CDM in Brazil report to Arcelor France – 27 May 2002;*
- *GHG consultancy proposal, June 2003;*
- *Evaluation of GHG Project Opportunities at CAF, 11 December 2003.*
- *Sustainability Program of Belgo consultancy proposal, July 2004*;

DNV confirmed that the change of consultancy occurred due to the fact that PwC, which was advising PP between 2002 and 2007, are the owners of the consultancy company Instituto Totum, which kept accompanying the PP's project activities (see section 3.2 of the validation report).

The UNFCCC's New Methodologies database shows that the methodology AM0082 was approved in its fourth submission by members of "Technical Group for Renewable Charcoal", as follows:

1º) NM0002 on 23 June 2003 >
http://cdm.unfccc.int/methodologies/PAmethodologies/pnm/byref/NM0002

2º) NM0029 on 10 September 2003 >
http://cdm.unfccc.int/methodologies/PAmethodologies/pnm/byref/NM0029

3º) NM0104 on 18 April 2005 >
http://cdm.unfccc.int/methodologies/PAmethodologies/pnm/byref/NM0104

4º) NM0278 on 2 July 2008 > Approved as AM0082 v.01 on July 2009
http://cdm.unfccc.int/methodologies/PAmethodologies/pnm/byref/NM0278 > >>

Therefore, it is correct to affirm that Brazilian companies using renewable coal, such as ArcelorMittal Brasil, Vallourec & Mannesmann do Brasil (V&M) and Plantar, which are Members of the "Technical Group for Renewable Charcoal" (created in 2005 as described in the timeline of the Table 4 of the final PDD), has pursued the approval of AM0082 for over six years until it was finally approved at EB48.

Finally, the DNV concluded that the project activity complies with the VVM v.01.2, Para 102 (b) as several continuing and real actions were taken to secure CDM status for the project activity for almost a decade.

Barriers

The project activity has demonstrated that it faces several barriers, as initially six baseline scenarios were identified and five were eliminated through the following steps:

1a) Compliance with actual laws and regulations, which eliminated the alternative scenarios 3, 4a and 4b;

1b) Assessment of supply and demand of reducing agents, which eliminated the scenario of charcoal supply availability (Alternative 2b), which was not possible to occur due to several reasons evidenced throughout section B.4 of the PDD (pages 22 to 26) and summarized below as follows:

- by existing plantation of ArcelorMittal (without investing into newly established plantation), as the growth rate (conservative > Vital M.H.F, 2009[*]) were not sufficient to provide the PP's need for wood (Table 4 – section B.4);
- by the charcoal market, as PP presented marketing evidences in section B.4 showing that "in accordance to the National Social and Economic Development Bank, the charcoal industry is currently the most affected by the ever increasing demand for wood sources, given the near exhaustion of the forest plantations established under the fiscal incentives, and the lack of new plantations (AMS, 2009[†]; SBS, 2003[‡])." (Figures 8 to 10 – section B.4). See Annex 6 of the final PDD.

In the Step 2a and 2b (pages 27 to 37 – section B.4), it was presented and discussed the Barriers of Investment and Regulatory, which are faced by the alternative scenario 2a (Use of Charcoal from newly established), but not faced by the alternative scenario 1 (Use of Coke).

[*] As presented in the Annex 6 – References of the final PDD: Vital, M. H. (2009, 03). *Florestas Independentes no Brasil.* . From http://www.bndes.gov.br/SiteBNDES/export/sites/default/bndes_pt/Galerias/Arquivos/conhecimento/bnset/Set2903.pdf

[†] As presented in the Annex 6 – References of the final PDD: AMS. (2009). *Florestas Energéticas no Brasil.* Retrieved 11 17, 2010 from http://www.silviminas.com.br/Publicacao/Arquivos/publicacao_472.pdf

[‡] As presented in the Annex 6 – References of the final PDD: SBS. (2003). *O Setor Florestal no Brasil.* Retrieved 11 17, 2010 from http://www.bndes.gov.br/SiteBNDES/export/sites/default/bndes_pt/Galerias/Arquivos/conhecimento/seminario/florestal2.pdf

The barriers were demonstrated as per the guideline 2 of the Guidelines for demonstration and assessment of barriers (EB50 Annex 13), paragraph 5. CARs #01, #02, #06, #07 and #09 were raised and closed by DNV related to the baseline scenario and/or additionality of the project activity, and reference it thus made to these CARs and the PP's responses.

The investment barrier demonstrates that CDM was relevant to the project activity as based on the CER's value of US$ 4,00 expected in 2004 /24/ it could alleviate:

- the lack of debt financing structure in Brazil (Figure 12), as the amount disbursed in 2005 and 2006 was around R$ 50 million while the required investments for the forestry base of the related project is around R$ 490.86 million;
- the instability of macroeconomic indicators (SELIC rate), as it reached a minimum of 13.25% per year in 2006, and a maximum of 26.5% per year from February to May 2003 (as confirmed in the Brazilian Central Bank home page: www.bcb.com.br);
- the fact that revenues are obtained at least 7 years after the first disbursements (harvest rotation in the region);
- the lack of previous experience with planting eucaliptus plantion (Souza,Toledo,&Filho, 2009);
- the inability of the small farmers from *Zona da Mata* to provide loan guarantees, which makes the incentives inaccessible, as: the loan guarantee involves possession of property (i.e. in case of some failure of wood production the farmer loses the property); the farmer must be in compliance with environmental legislation (i.e. have demarked Reserva Legal and APP at his property (Propflora, 2010)

The regulatory barrier exists as the percentage of farmers with Legal Reserve and APP registered in Brazil is respectively 10.70% and 2.01% in terms of quantity of existent farmers and in terms of total rural area this number is 4.92% and 3.26%, which increases the cost and the risk failure of the project (Table 1-2, pages 193-194 - http://ageconsearch.umn.edu/bitstream/56831/2/REA_Artigo3_V1N2_2003.pdf).

A minimum of six environmental licenses are required for agricultural sector's projects in addition to the licenses required for the mining sector, i.e.:

- Rural Land Registry
- Term of Legal Reserve Area
- Permanent Protection Area
- License of interfere in native areas
- License for change in the land use
- License for the exploration of planted area

DNV confirmed that none of the 198 small farmers that are part of the project activity supply chain had regular environmental status when the decision of implementation was taken in 2005, which represents 1,188 environmental licenses. However, with the PP's technical and law assistance, free of cost support, among 98 have licensed their Legal Reserve Area up to now (almost 50% of all farmers) and the others are applying to be regular and then able to harvest the biomass they planted (references /27//28/ of the FVR).

Besides the technical support, the lack of wood to produce charcoal is overcome as *"the loans to invest in plantation is only approved due to the fact the project proponent is at the same time the loan Guarantor and the principal Financial Responsible. The PP pays the Legal Reserve delimitation and registration, overtaking all risks of the reforestation activities, also it gives technical support to the small farmers and pre-purchase their planted biomass",* as presented (among other supporting data) on page 33 of the PDD.

As the *"(1) The production and supply of the renewable reducing agent"* and the *"(2) The industrial process*" are part of the same production system (i.e.: no blast furnace can operate without wood for charcoal to be available, unless it is deforested), the presented barriers affect the whole pig iron production chain, downstream and upstream, simultaneously.

On the other hand, for the Alternative Scenario 1 it would be necessary to issue only one type of environmental license, which is for the blast furnace implementation (also needed in the Alternative Scenario 2a - reference /26/ of the validation report).

DNV evaluated all the information presented as evidence by PP and also cross-checked them with independent data from PP (references /47-52/ of the validation report) and from the Brazilian forest regulations (references /53-55/ of the validation report) and charcoal markets (references /56-72/ of the validation report) in order to conclude the barriers faced by the project activity are real and objective as per requirements of the VVM v.01.2, Para 115 (a), the Guidelines of the EB 50 Annex 13 and also the requirements presented in the AM0082, v.01.

Applicability Conditions

It is stated in the final PDD that *"The upstream emissions of biomass production within these plantations are accounted under the proposed PDD but they will be removed from the project boundary after the A/R CDM PoA registration[*]" (including the footnote below), therefore the possibility of registering part of the land as an A/R project activity has been considered according the "Guidance for the situation when the plantation (or part of) is covered under an A/R CDM project activity"*, cited.

At this moment, the plantations continue to be considered inside the PDD due to the fact that a separate CDM AR project activity has not been submitted yet for registration.

It was discussed in the last Meeting of the COOPFLOS (Cooperative of Farmers created to manage the eucaliptus plantion and the CERs generated by the project activity), held in 5 February 2013 in the city of Juiz de Fora, that *"the project activity is in its conception phase due to the fact it relies on farmer's land regularization".*

Searching in the UNFCCC's projects database with the selection of:

[*] As per paragraph 38 of the of the twenty-fifth meeting of the Board decision, for the cases where renewable reducing agent is procured from a registered CDM AR project activity, project emissions are accounted within the respective project so as to avoid double counting of project emissions.

1-) Sectoral scope - 14
2-) Host country - Brazil

The following 3 project activities are currently REGISTERED:

- Reforestation as Renewable Source of Wood Supplies for Industrial Use in Brazil
- AES Tietê Afforestation/Reforestation Project in the State of São Paulo, Brazil
- Vale Florestar. Reforestation of degraded tropical land in Brazilian Amazon

And the following 2 project activities are currently UNDER VALIDATION:

- Electricity generation from renewable sources–Sykué I Thermoelectric Power Plant.
- Thermoelectric Power Plant of 20MW driven by biomass originating from recently-planted energy forest dedicated to the project – UTE RONDON II

Hence, it can be concluded based on the search in the UNFCCC's projects database that ArcelorMittal has no A/R CDM project registered and/or under validation, and so, it complies with the applicability condition mentioned.

The question states that *"the validation report did not specify anything related to this applicability conditions".* However, the validation report discusses all the applicability conditions presented by the methodology AM0082 as partially copied below:

Condition:

"All dedicated plantations are geographically identified and delineated

(...) DNV has assessed the Forest Cadastre, an internal databank of ArcelorMittal BioFlorestas, which contains all information on forestry operations /12/, occurrences, harvesting and transportation. (...) DNV has assessed trough land use maps and land eligibility study that new plantations are established on grasslands /29/. The description of categories areas was confirmed trough Biomass Brazilian Maps /76//77/. A cross check of some forests sampled on Annex 5 of PDD were identified on GIS cartography system and confirmed trough Google Earth internet system.

Dedicated plantations in the host country are under the control of the projects participants

DNV has assessed the existent planted eucalyptus is owner of ArcelorMittal BioFlorestas /10//12//35/, a branch of ArcelorMittal Brasil, owner of Blast Furnaces. The new forest plantations (PPF program with small farmers) are under a long term agreement and captive supplier of renewable biomass to produce charcoal /29/.

Dedicated plantations are located only in tropical conditions

DNV has assessed trough land use maps and land eligibility study that new plantations are established on grasslands /29/. (...) located between 14ºS and 23ºS with rain between 1000 and 1500 mm/y /78/.

Dedicated plantation (or part of the dedicated plantation) is covered under a registered A/R CDM project, it shall not be included in the project boundary

DNV has confirmed that the dedicated plantation is composed by reformed plantations /10/ (...) and newly plantations (plantations by forest farmers that produce wood in frames of ArcelorMittal BioFlorestas, named Forest Outgrowth Programme - PPF). On the moment when PPF is registered as an A/R CDM PoA, the newly established plantations as well as associated project emissions will be excluded form the boundary of this industrial project /29/.

Please, see validation report's Table 2 to confirm that all applicability conditions were analysed.

The prior CDM consideration does not include the plantations as it would have to be considered if the project activity was an A/R CDM project, which it is not.

CAR#08 was raised in order to evaluate the timeline of the forest plantations and the PP replied that *"As discussed in the PDD and presented to DOE, there were investments in renewable biomass plantations in 2004, 2005 and continue investing on planting and reforming its dedicated areas. However, a plantation investment may not be considered a industrial project activity starting date as the coke substitution would only occur allied with the existence of a blast-furnace where the coal coke would be replaced".*

Explaining the closure of the CAR#08, DNV stated that *"according the Glossary of CDM terms (EB66 annex 63), the construction of ArcelorMittal Juiz de Fora blast furnaces was the actual real action of CDM project activity as an irreversible process. DNV had confirmed that the old forests were involved to supply wood to cellulose manufacturers and charcoal to independent pig iron producers."*

During the barriers evaluation, the assessment team concluded that the barriers affect the whole pig iron production chain, downstream and upstream, simultaneously. However, AM0082 or the VVM v.01.2 do not present any requirement to force the PP to demonstrate barriers related to both plantation and the blast-furnace, as it stated that it *"may be applied to the integrated iron ore reduction system"* not shall.

The blast-furnace is the common technology used for pig-iron production worldwide, specially in Brazil (http://www.acobrasil.org.br/site/portugues/index.asp) and would be used in both realistic scenarios of charcoal and coke based pig iron production, only with changes in its specification (reference /7/ of the validation report).

All other applicability conditions (with no exception) were presented and discussed in the final PDD and analysed by DNV in Table 2 of the validation report (section 4.3) based on local

knowledge and reliable evidences in order to conclude that the project activity meets each of the applicability conditions and that thus AM0082 v.01 and any tool adopted is applicable to the project as per VVM v.01.2, paragraph 71.

Yours faithfully
for DNV CLIMATE CHANGE SERVICES AS

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