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ECO SECURITIES

CDM Project Activity Registration Review Form – Inácio Martin Biomass Project

Answers regarding Request 1:

1. **As regards Stakeholders comments, the PDD mentions (*ref* Page 31 Section G1) that EcoSecurities and project developer addressed questions raised by stakeholders. But section G.2 mentions that no comments were received which is validated by DOE as well. This issue needs clarification.**

Answer: The PDD is not as clear as it should be about the stakeholders' comments. What the PDD should make clearer is that EcoSecurities and the Project Developer would have addressed all questions raised by stakeholders, but no comments or questions were received. Therefore, since no comments were received, no comments were addressed.

2. **The PDD and the DOE refers the project as Co-generation. However, the project does not use steam for any process and uses only for power generation. This needs clarification.**

Answer: The term co-generation is indeed misleading in the PDD. In the project activity, biomass residue is burned in a boiler to produce high-pressure steam. This steam is introduced into a steam turbine, where it flows over a series of aerodynamic turbine blades, causing the turbine to rotate. The turbine is connected to an electric generator, so as the steam flow causes the turbine to rotate, the electric generator turns and electricity is produced. After the steam leaves the turbine it is cooled to its liquid state in the condenser. The liquid is pressurized by the pump prior to going back to the boiler. In summary, steam is produced, but only used for the generation of electricity via a steam turbine.

3. **DOE states (ref Section 2, page 2) in the request for registration form that the revised DNA approval from Brazil Government is yet to be obtained.**

   The project has received the Host Country Approval from the Brazil DNA's revised Letter of Approval (LoA) as follows: "since the project applies Version 07 of AMS I.D and AMS III.E and hence needs to be submitted for registration within eight weeks after these methodologies were revised on 3rd March 2006, DNV decided to upload the request for registration and submit the complimentary revised LoA as soon as it is received from the DNA of Brazil".

   Hence CDM EB may not be in a position to register until it receives from the DOE, the revised new DNA approval from Brazil Government. However if CDM EB finds the Brazil DNA's approval of the older appropriate, the project could be registered as a CDM activity.

Answer: A revised LoA was received on 15 May 2006 and forwarded the same day to the UNFCCC Secretariat. The revised LoA was an outstanding issue of the Secretariat's completeness check (request for registration was submitted on 27 April 2006). After the request for registration was published on 17 May 2006, DNV again submitted the revised LoA on 30 May 2006. On 21 June 2006 the Secretariat confirmed to have received both messages and that the revised LoA was not published due to an oversight on the Secretariat's side.

Answers regarding Request 4:

1. **Host country approval by the Brazilian authority is for version "4" of the project, which pre-dates the current version 5B, submitted to EB for registration. As the Host country approval clearly specifies the PDD version, it may be advisable for the proponent to request for a revised HCA from the Brazilian DNA.**
   As per the project proponent *" The only changes made to this version of the PDD compared to the PDD submitted to the Interministerial Commission on Global Climate Change on 24 October 2005 referred to in the letter of approval of the DNA of Brazil, are related to the recalculation of the build margin emission factor with the plant efficiencies recommended by the CDM Executive Board at its 22nd meeting and to the changes in "Project Participants" and "Annual Emission Reductions", guided by the new "GUIDELINES FOR COMPLETING CDM-SSC-PDD and F-CDM-SSC-Subm".*

   As per the validation report by DNV, *"This validation report summarizes the findings of the validation. The only changes made to this version of the validation report compared to the validation report rev. 04 dated 19 June 2005 referred to in the letter of approval of the DNA of Brazil of 22 December 2005 are linked to the status of issuance of the letter of approval by the DNA of Brazil and the recalculation of the build margin emission factor with the plant efficiencies recommended by the CDM Executive Board at its 22nd meeting and the data vintage for the calculation of the operating and build margin emission factors (data for the years 2002-2004 instead of data for the year 2001-2003)."*

   Documents registered should be the final ones with no conditionality or excuses. DOE should have not gone ahead for request for registration without getting the proper documents at the first place.

Answer: See above.

Answers regarding Requests 2, 3 and 6:

1. **The PDD indicates that the crediting period shall start as of June 1st, 2006. Since the crediting period has to start after the registration (which would occur on June 16, at the earliest), the date has to be corrected.**

Answer: The project will only start operating 1 January 2007. The start of the crediting period will be updated in the PDD to reflect this change.

2. **Since the current source of power consumption by the independent energy consumer forms a strong basis for the baseline scenario and is not proven, applicability of the baseline methodology cannot be confirmed.**

Answer: According to the page 3 of the PDD, the independent energy consumer, who will purchase the electricity generated by the project activity, currently purchases electricity from the national grid. This means that the baseline scenario is grid electricity consumption in the absence of the project. This is confirmed on Page 4 of CDM Project Activity Registration (F-CDM-REG), and pages 11, A-4 and A-9 of Validation Report Form and NO. 2005-0294.

Additional information regarding this issue can be added to the PDD, in order to clarify these points if required.

3. **Although the DOE has mentioned in its validation report that it had reviewed and analysed the calculations for estimating at the grid emission factor, these calculations have not been provided in detail in the PDD.**

Answer: Historically there have been a lot of issues accessing grid data, and calculating accurate CEFs, in Brazil. To solve this problem, a 'working group' comprised of EcoSecurities, Econergy, and

EcoInvest (the three main CDM consulting companies in the country) calculates the CEFs annually. All calculations are based on official available data from ANEEL (National Electric Energy Agency) and ONS (National System Operator). These grid factors are also endorsed by the Brazilian DNA.

Calculation procedures and assumptions are thoroughly discussed with DOEs, with the purpose to clarify every item and every possible doubt.

This procedure for grid emission factor calculation has been used in every Brazilian project to date. Detailed calculations of the Grid emission factor were not presented in detail in PDD, because it has already been pre-approved by DOE. Additional information regarding this issue can be added to the PDD, in order to clarify this point if required.

4. **Details of the combustion and power generation technology employed, complete technical and performance specifications of the steam boiler, steam turbine, biomass characteristics, biomass drying process, energy consumed (if any) for biomass pre-processing and drying have not been provided and the same should be included in the PDD. Also, the performance details of the power plant have not been provided including annual hours of operation. The steam boiler and steam turbine efficiency parameter and annual operating hours need to be mentioned along with the expected annual plant load factor. This will enable in confirming with the realistic generation of power and hence the emission reductions.**

Answer: According to the equipment Purchase Contract No. 55-0218-0001 Between CCC-Machinery GmbH and AREVA Energietechnik GmbH for the Procurement, Supply and Erection of Biomass Power Plant in Inacio Martins Parana, Brazil (refer to Annex A), the equipment to be supplied has the following technical specifications:

Boiler
Reference Data:

Supplier: Biochamm
Fuels: wood chips, powder and husk
Steam flow: 53,0 t/h
Steam pressure: 43,0 barg
Steam temperature: 420 °C
Steam enthalpy: 779,09 kcal/h
Heat Looses:
Flue gas at stanch: 13,25%
Radiation: 0,87%
Ash: 0,08%
Manufacturer margin: 1,0%
Total: 15,2%
Thermal efficiency at LHV: 84,8 +/- 2 %
Combustion air excess max.: 50%

Fuel Consumption and LHV (Low Heat Value)

Fuel	Percentage %	Humidity %	HHV (Kcal/Kg)	LHV (Kcal/kg)
Sawdust	33,33	73,32	4705	900
Blade and bark rests	33,33	15,35	5080	2900
Laminated chips*	33,33	44,33	5025	2000

Average LHV for the three fuels combination: 1.933 Kcal/Kg
Fuel consumption for 53 t/h steam (43 barg and 420 °C): 25.193 kg/h +/- 5%
(* = without contamination)

Boiler Availability

8.260 hours/year in operation and 500 hours/year due scheduled maintenance shut-downs (This data is valid for the boiler only and is dependent on the Operation and Maintenance program applied by the O&M company)

Water Make-Up

Less than 5 m^3/h (taken from the river)

Steam Turbine

Supplier: Tuthill
Electrical power generation: 12.33 MW
Rated Output: 15.625 kW
Voltage: 13,8 kV +/- 5%
Grid Supply Voltage: 34,5 kV +/- 5%
Availability: more than 96% hours/year
Make-up: 60 m^3/h water for Cooling Tower

Power Plant Internal Electrical Consumption

1) Boiler electrical consumption	
Grate driven system	10,0 HP
Pump 01	250,0 HP
Pump 02	250,0 HP
Primary combustion air fan	100,0 HP
Secondary combustion air fan	75,0 HP
IDF	300,0 HP
After treatment pump (2 X 3,0 HP)	6,0 HP
Demineralized water system pump	3,0 HP
Swoot blowers (5 X 0,5 HP)	2,5 HP
Rotaries valve	2,0 HP
Screw in feed dosing silo (4 X 5,0 HP)	30,0 HP
Agitator	3,0 HP
Air Compressor	0,5 HP
Installed power for the boiler set	**1.038,5 HP**
Estimated boiler power consumption	**600 kW**
2)Fuel handling power consumption	
Fuel reception batch	20,0 HP
Belt conveyor BTC-10	10,0 HP
Rotary blades sieve	150,0 HP
Belt conveyor BTC-12	10,0 HP
Belt conveyor BTC-42	12,5 HP
Extraction screw BEM-400 (2 X 30,0 HP)	60,0 HP
Belt conveyor with tripper BTC-20	10,0 HP
Belt conveyor BTC-27	12,5 HP
Installed power for the fuel storage / in feed	300,5 HP
Estimated power consumption fuel storage	225 kW
3) Others electrical consumptions	
Firefighting system	20 kW
Overall communication	10 kW
Air-conditioning & ventilation	60 kW
Compressed air system	5 kW
Illumination	30 kW
Condensate pumps (2 X 20 HP)	15 kW
Cooling water pumps (3 X 400 HP)	500 kW

Cooling tower fans (3 X 75 HP)	150 kW
Turbine lubrication system	5 kW
Estimated power consumption for others	795 kW
TOTAL ESTIMATED INTERNAL POWER PLANT ELECTRICAL CONSUMPTION	1.620 Kw

Net Power supply and power plant net efficiency

Available power to be supplied to the grid: 10.710 kW +/- 5%

Biomass pre-processing involves transportation and shredding of the biomass residuals. The energy consumed for the biomass pre-processing was not mentioned in the PDD but it will be considered in the Project verification phase, and is explicitly referred to in the monitoring plan.

5. **Data ID No. D 3.3 needs clarification on whether it is total biomass consumed by the project or it refers to the biomass purchased from third parties which decays in the baseline scenario. Furthermore it is suggested that the PDD clarifies whether the project will use any fossil fuels for start during the crediting period of the CDM project. If expected to use, the monitoring parameters for fossil fuels should then be included.**

Answer: In the case of data D.3.3, the biomass mentioned is ALL the biomass consumed by the project, which is 100% purchased from third parties. The Inácio Martins project will not use any fossil fuel for the start-up during the crediting period. The PDD will be amended in order to clarify these points.

Responses to the remaining requests provided earlier in this document.

Answers regarding Request 5:

Responses to this request provided earlier in this document.

If any of the above requires any further clarification, please do not hesitate to contact:

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