Mr. S.K. Sethi
Chair, CDM Executive Board
UNFCCC Secretariat
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25th February 2008

Re Request for review of the request for issuance for the CDM project activity "Trupan Biomass Power Plant in Chile" (Ref. no. 0259)

Dear Mr. Sethi and members of the Board,

SGS has been informed that the request for issuance for the CDM project activity "Trupan Biomass Power Plant in Chile" (Ref. no. 0259) is under consideration for review because four requests for review have been received from members of the Board.

By means of this combined letter, SGS and the Project Participant would like to reply to the issue raised and provide additional information.

The concern of all three requests states:
The baseline emission (due to uncontrolled burning of biomass) has been calculated using "additional biomass" rather than from the quantity of biomass used as fuel in the project plant and net quantity of heat generated in the plant and boiler efficiency as prescribed by Equation 24 of ACM0006 (Version 01) for Scenario 3 applied by the project activity. Further, the project emission (methane emissions from combustion of biomass) also considers only the quantity of the "additional biomass". Clarification is required on how the DOE has verified that the calculations of emission reductions, including the used of biomass power generation factor of 274 KWh/m3 fixed for the entire crediting period, have been conducted in accordance with the methodology.

Combined response:
The project activity comprises a renewable energy project that involved the installation of a new cogeneration plant using wood residues at a site where no power generation would have occurred. The project was validated using ACM0006 ver.1 scenario 3. Under this scenario, the industrial complex consumes a large part of the electricity generated by the project plant, and the surplus is supplied to the grid. In the absence of the project activity, part of the biomass would have been used for heat generation only and the remainder would have been dumped or burned in an uncontrolled manner. As a result, without any power generation, the industrial facility would have had to consume power from the grid and there would have been no surplus power available for the grid.

The "additional biomass" is the biomass related to the implementation of the CDM project activity. It is the amount of biomass combusted in the Trupan power plant to produce electricity. In the baseline scenario, this amount of biomass would have been burned as described in the first paragraph on page 7 of the validation report and page 49 of the registered PDD.

The amount of biomass for the Trupan project activity was calculated using a "biomass power generation factor". This factor was calculated from the energy / mass balances of the project and reference power plant. It is described on pages 43 and 44 of the registered PDD and explicitly calculated in Annex 3 of the registered PDD.

ADDITIONAL BIOMASS CALCULATION DETAIL FOR TRUPAN

From Table 2 (page 10) of the Trupan PDD, the following information can be drawn:

Table 2: Summary of Operational Data

		Real mill		Base case	
		Winter	Summer	Winter	Summer
Steam generation:					
HP steam	t/h	160.0	170.0	117.7	108.0
Soot blowing steam	t/h	1.2	1.2	0.6	0.6
Fuel consumption:					
Sander dust etc.	tDS/h	4.0	4.0	4.0	4.0
Bark etc.	tDS/h	30.7	30.8	16.8	14.0
Sum	tDS/h	34.7	34.8	20.8	18.0
Heat generation:					
Sander dust etc.	MW	19.3	19.3	19.3	19.3
Bark etc.	MW	105.9	113.7	57.9	51.6
Total heat to steam	MW	125.3	133.0	77.3	70.9
Power generation	MW	24.1	27.9	0.0	0.0

1. Electric power generation factor calculation for Trupan

Gross electric power generation capacity	(MW)	26.0	Average between the Winter and Summer values.
Biomass consumption with CDM project	(BDt/h)	34.75	Average between the Winter and Summer values.
Biomass consumption with CDM project	(mt^3 stereo/h)	214.8	Idem
Biomass consumption without CDM project	(BDt/h)	19.4	Average between the Winter and Summer values.
Biomass consumption without CDM project	(mt^3 stereo/h)	119.9	Idem

Conversion factor	(BDt/m^3 stereo)	0.1618	Calculation based on 2004 Trupan data.

Electric power generation factor for Trupan	**(MWh/m^3 stereo)**	**0.274**

The "biomass power generation factor" is the total amount of electric power (in MWh) that can be generated in the Trupan project plant per unit of additional biomass consumed by the project plant compared to the biomass consumed in the reference plant in (m3 st).

According to explanation provided in footnote 18 in page 43 of the registered PDD, this method of calculating the additional biomass is conservative because the energy / mass balances from which the power generation factor was calculated, were made under the assumptions of full capacity generation and new equipment efficiencies. High plant load factor and high equipment efficiency translates into efficient use of the additional biomass resources related to the project activity. This results in a lower amount of net emission reductions associated to the alternative use of the biomass fuels:

$$E.R._{Biomass\ use} = GWP_{CH4} * \text{Additional biomass} * (EF_{CH4 uncontrolled\ burning} - EF_{CH4\ controlled\ burning})$$

=> The lower the "Additional biomass" term, the lower the "$E.R._{Biomass\ use}$" term.

Furthermore, since the biomass power generation factor remains fixed for the entire crediting period of the Trupan project activity, this method for determining the additional biomass becomes even more conservative as the Trupan power plant ages and becomes less energy-efficient.

According to the above, the additional amount of biomass associated to the project activity was calculated by multiplying the net electric power generation of the Trupan power plant (a directly monitored variable) by the biomass power generation factor calculated in Annex 3 of the registered PDD and shown in the tables above.

The conversion of the additional volume of wet biomass to the additional weight of dry biomass was done using the “Biomass conversion factor” (BDT/m^3stereo). This BDT factor was calculated monthly from the following on-site measured data: volume, weight and moisture content of the biomass entering the plant. The calculation of the biomass conversion factor was verified during the site visit.

During the on-site visit, SGS verified that both the baseline and project emissions due to the alternative use of biomass were calculated using “additional biomass” associated to the project activity multiplied by the corresponding net calorific values of the biomass, the global warming potential of CH4 and the corresponding methane emission factors for controlled and uncontrolled burning of biomass.
SGS is of the opinion that this calculation of the amount of biomass is robust, verifiable and conservative and results in real, measurable and long-term CERs.

To further support the arguments presented above, a recalculation of the emission reductions for the monitoring period using equation Nº24 and actual monitored heat data has been undertaken and is attached as Annex 1 to this response. The results confirmed the arguments above, as by using equation Nº24 total emission reductions for this monitoring period would have been 122,162 tCO2e whilst the original emission reductions claimed are 120,835 tCO2e (difference is 1.1% between the two methods).

We hope that the above clarification and attached information addresses the concern of the Board. Irma Lubrecht (+31651851777) will be the main contact for the review process and is available to address questions, if needed by the Board.

Yours sincerely,

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Annex :

1. Recalculation of emission reductions using equation Nº24