	Response to request for review "Partial substitution of fossil fuels with biomass in cement manufacture" (0844)	**Date:** July 2nd, 2007
		Reference: CDM Ref 0844

UNFCCC Secretariat
Martin-Luther-King-Strasse 8
D-53153 Bonn
Germany

Att: CDM Executive Board

We are providing hereafter further explanation regarding your comments referred in your Request for Review on our project 0844 – "Partial substitution of fossil fuel with biomass on Cement Manufacture" –.

Query Nr. 1:
"The investment analysis presented should clearly indicate all variables used. It is not acceptable to "blackout" variables which relate to the baseline or additionality".

Regarding your Query Nr. 1, we would like to establish that information was previously "blacked out" with the aim to act in accordance to our Company's Purchasing Policy, which sets a rule on "not to give open public access to pricing data", pursuing by this the protection of sensitive and/or confidential information from our suppliers.

The full cash flow version was available to the DOE during the validation process of the PDD. The full version of the cash flow is enclosed. (Please see file *Minas Project - cash flow.pdf*).

The variables which were "blacked out", but shown in the file enclosed to the present note are:

- Fuel oil cost ($/tn)
- Petcoke cost ($/tn)
- Rice husk cost ($/tn)

The aim of the cash flow was to clearly show the barrier to the investment, considering the cost of the project and the lack of financing. The document (*Minas Project - cash flow.pdf*) shows the financial situation of the project, with and without the benefits arising from the CDM derivatives.

Query Nr. 2:
"Further justification is required regarding how it has been validated that the project activity would not take place without the CDM. In particular it should be confirmed that the price and availability of fossil fuels was not the decisive factor in the decision to proceed with the project, as these issues are quoted in the PDD".

DOE may here state that they have had free access to all relevant information from CUCPSA that confirm that price and availability of fossil fuels were not decisive factors to proceed with the project.

Nonetheless, we confirm that the price and the availability of fossil fuels were not the decisive factors to proceed with the project. All demonstrating information was available along validation process and it was properly consulted by DOE.

With the aim to demonstrate that the project would have not been attractive without the incomes from CERs, the cash flow analysis abovementioned was applied in Steps 0 and 3 of the *Tool for the demonstration and assessment of additionality*.

The incentive from CDM was actually the driver to start with the project as it was taken into account during the decision process to go forward with the technical development and investment.

As it is stated in the PDD, it was the existence of barriers the decisive factor preventing the implementation of the proposed project activity. The barrier analysis depicted in the PDD, include the following:

a- Investment barriers

- The Uruguayan GDP retreated by almost 19% between 1999 and 2002.
- Accordingly, due to its relationship with GDP growth, the construction sector experienced one of its main shrinkages between 1998 and 2000, receding by 16%.
- These withdraw in the construction affected in turn the cement consumption per inhabitant, which dropped from 243 kilos per inhabitant in 1998 to 198 kilos in 2000.
- CUCPSA, in line with this market, accumulated a decline in its dispatch level of 72% during 1998-2002.

Therefore, the project activity faces important barriers to investment associated with, not only lack of funding in national currency for the Uruguayan economy, but also high level of uncertainty and negative expectations about the cement industry evolution. Consequently, investments in companies focusing in the internal market, as CUCPSA, were not an attractive option at the time of investment. As it was stated previously, the cash flow analysis presented shows that besides the negative financial context, the project itself was not profitable without CERs.

b- Technological barriers

- Lack of knowledge of CUCPSA: as it was indicated in the ¨Guides for the selection and use of fuels and raw materials in the cement manufacturing process¨ - Cement Sustainability Initiative - World Business Council", the use of biomass are generally part of individual company procedures, and thus not well known to a broader public,
- New control processes in CUCPSA´s clinker production needed: the use

of rice husk adds silica to the process which, giving consideration to the other involved raw materials, upsets the chemical balance, thus requiring the implementation of specific procedures for the purposes of dosing said material,

- Operational problems:
  - the combustion quality of biomass is considerably different than that of fossil fuels thus changing the stability and characteristics of processes,
  - the perishable nature of biomass causes its physical and chemical characteristics to change over brief periods of time, bringing some troubles into the process.

All this barriers occurs in context where CUCPSA have certified ISO 14.001 standard, which implies the implementation of additional process controls in order to keep this certification on.

Therefore, the aim of the cash flow analysis was to indicate the impact of the CERs on the project scenario, not on the project alternatives, showing in that way the same input in every variable except on "CERs Price". Although the PDD refers to a cash flow analysis, it is not an investment analysis as is established in Step 2 of the *Tool for the demonstration and assessment of additionality* since it does not assess the project's alternatives; as it was abovementioned, the Minas´ project additionality was demonstrated through a barrier analysis (Step 3).

Besides, we inform that if a 10 % increase in petcoke´s prices is considered for the entire analysis period, the IRR reaches 4,8 %, below the reference discount rate of 5 % considered to calculate the Net Present Value. Consequently, even with an increase of the price of main fossil fuel used in the project at the mentioned 10 %, the project is still unprofitable when income from CERs is not taken into account.

Thank you very much.

Best regards,

On behalf of CUCPSA:

Federico Gutiérrez Acosta

CASH FLOW FOR MINAS' BIOMASS PROJECT CONSIDERING INCOME FROM CO2 REDUCTION CERTIFICATES
in US DOLLARS

Baseline scenario

Description	Año		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Investment	$												
Fuel Oil cost	$/tn		190	245,1	290	310	326	358	394	433	477	524	577
Petcoke cost	$/tn		0	65	68	72	104	107	110	114	117	121	124
Fuel Oil consumed	t		4.928	2.417	225	225	230	237	244	251	259	267	160,2545096
Petcoke consumed	t		0	15393	27057	27057	27525	28351	29201	30078	30980	31909	19172,12506

Project scenario

Descripción	Año		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Investment	$	443000											
Fuel Oil cost	$/t		190	245,1	290	310	326	358	394	433	477	524	577
Petcoke cost	$/t		0	65	68	72	104	107	110	114	117	121	124
Rice husks cost	$/t		12	12	12	16	17,6	18,1	18,7	19,2	19,8	20,4	21,0
Fuel Oil consumed	t		4.590	2.174	200	200	207	213	219	226	233	239,7623652	144
Petcoke consumed	t		0	13845	24022	24022	24743	25485	26250	27038	27848,62667	28684,08547	17234,35469
Rice husks consumed Total	t		4.263	11.586	14.246	14.246	14.673	15.113	15.567	16.034	16.515	17.010	10220,2631
Rice husks consumed Project	t		718	3.077	5.737	5.737	5.909	6.086	6.269	6.457	6.650	6849,955631	4115,681675
CERs Price	U$S/t CO2 e	6	6	6	6	6	6	6	6	6	6	6	6
CERs generated	t CO2 e		532	2635	5203	5203	5333	5493	5658	5827	6002	6182	3714,0
Income			16177,7	37034,8	73950,8	29611,6	70652,0	74511,8	78650,7	83087,7	87862,3	92999,3	57477,1
Amortizations			-44300	-44300	-44300	-44300	-44300	-44300	-44300	-44300	-44300	-44300	
Tax shield			13290	13290	13290	13290	13290	13290	13290	13290	13290	13290	0
Taxes (30%)			-4853,324	-11110,453	-22185,24	-8883,4813	-21195,607	-22353,5387	-23595,2247	-24926,3134	-26358,6921	-27899,7893	-17243,11927
Cash flow		-443000	24614,4	39214,3896	65055,56	34018,1229	62746,416	65448,25702	68345,52437	71451,39785	74793,61479	78389,50842	40233,94495
Repayment period calc.			18,00	6,94	3,44	2,72	1,96	1,52	1,23	1,03	0,88	0,76	0,71

IRR (10 years)	5,6%
NPV (10 years, 5%)	$ 14.991,05
Repayment period	6 years

CASH FLOW FOR MINAS' BIOMASS PROJECT WITHOUT INCOME FROM CO2 REDUCTION CERTIFICATES
in US DOLLARS

Baseline scenario

Description	Año		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Investment	$												
Fuel Oil cost	$/tn		190	245,1	290	310	326	358	394	433	477	524	577
Petcoke cost	$/tn		0	65	68	72	104	107	110	114	117	121	124
Fuel Oil consumed	t		4.928	2.417	225	225	230	237	244	251	259	267	160,2545096
Petcoke consumed	t		0	15393	27057	27057	27525	28351	29201	30078	30980	31909	19172,12506

Project scenario

Descripción	Año		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Investment	$	443000											
Fuel Oil cost	$/t		190	245,1	290	310	326	358	394	433	477	524	577
Petcoke cost	$/t		0	65	68	72	104	107	110	114	117	121	124
Rice husks cost	$/t		12	12	12	16	17,6	18,1	18,7	19,2	19,8	20,4	21,0
Fuel Oil consumed	t		4.590	2.174	200	200	207	213	219	226	233	239,7623652	144
Petcoke consumed	t		0	13845	24022	24022	24743	25485	26250	27038	27848,62667	28684,08547	17234,35469
Rice husks consumed Total	t		4.263	11.586	14.246	14.246	14.673	15.113	15.567	16.034	16.515	17.010	10220,2631
Rice husks consumed Project	t		718	3.077	5.737	5.737	5.909	6.086	6.269	6.457	6.650	6849,955631	4115,681675
CERs Price	U$S/t CO2 e	0	0	0	0	0	0	0	0	0	0	0	0
CERs generated	t CO2 e		532	2635	5203	5203	5333	5493	5658	5827	6002	6182	3714,0
Income			12985,0	21226,8	42732,8	-1606,4	38654,0	41553,8	44702,7	48125,7	51850,3	55907,3	35193,1
Amortizations			-44300	-44300	-44300	-44300	-44300	-44300	-44300	-44300	-44300	-44300	
Tax shield			13290	13290	13290	13290	13290	13290	13290	13290	13290	13290	0
Taxes (30%)			-3895,508	-6368,0287	-12819,84	481,918749	-11596,207	-12466,1387	-13410,8247	-14437,7134	-15555,0921	-16772,1893	-10557,91927
Cash flow		-443000	22379,5	28148,7336	43202,96	12165,5229	40347,816	42377,65702	44581,92437	46977,99785	49585,21479	52425,10842	24635,14495
Repayment period calc.			19,79	8,77	4,73	4,18	3,03	2,35	1,90	1,58	1,34	1,16	1,09

IRR (10 years)	-1,3%
NPV (10 years, 5%)	$ -143.557,77
Repayment period	-