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27 June 2007

Dear Members of the CDM Executive Board,

Request for review - Transalloys Manganese Alloy Smelter Energy Efficiency Project (UNFCCC ID 1027)

Please find below our responses to the issues raised as part of the request for review for this project.

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EcoSecurities, on behalf of project participants to the above project (EcoSecurities Group Plc and Highveld Steel and Vanadium Corporation), would like to provide the following response to the comments raised by the three requests for review dated 13 June 2007.

Comment 1

"A clear investment and sensitivity analysis for all 5 furnaces explicitly following step 4 of AM0038 has not been conducted to demonstrate that the project activity without the CDM is economically less attractive than the most plausible baseline scenario."

Project participants' response:

The approach chosen in the PDD was that of a barriers analysis (illustrated by a financial analysis), as per step 3 of AM0038. As there was only one alternative remaining after applying barriers to potential scenarios (other than the project without being registered as a CDM activity), the project participants interpreted that there was no need for a NPV analysis explicitly following step 4 of AM0038. The reasoning behind this was explained on page 16 of the PDD submitted to registration:

> *"Therefore, the only realistic baseline alternative is alternative a) continued use of current furnace technology, and there is no need to perform Step 4: Compare economic attractiveness of the remaining alternatives (this step has in fact partly been performed in table 7, but it is very difficult to conclude on the attractiveness of the project based on such a purely financial analysis – see for instance the extremely high or low NPV and IRR values)."*

An investment analysis was nevertheless provided, showing

- results expected if the project was performing as well as targeted and
- actual results since the start of operation for the first two furnaces to be retrofitted (27 months from October 2004 – December 2006 for furnace 7, and 14 months from November 2005 – December 2006 for furnace 5), to supplement the qualitative barriers provided.

The analysis for these first two furnaces was considered representative of the others, for which detailed information was not available (in particular for furnaces 1 and 6 whose retrofitting has not been formally decided yet).

In response to the request for review, investment and sensitivity analyses explicitly following step 4 of baseline selection section of AM0038 have now been provided for all furnaces. It is provided in the updated PDD, attached to this request (with mark-ups to show the changes), and the main table of the updated PDD (table 7a) is copied below. *All assumptions are explained in detail in the updated PDD* (section B.4-step 3 and annex 8) according to step 4 of AM0038; they are based on realistic expectations of the project performance for each furnace.

This analysis shows that the NPV of the project is negative for all furnaces, which can be attributed to the technical barriers faced by the project, as explained in paragraph 5 of step 3 of the PDD submitted to registration (page 14).

> *"Two years of operation of the new furnaces have confirmed these risks as a number of components have failed: "jumper pipes", dust covers, pressure rings, bellows, locking pipes, downpipes, slipping devices, rubber hoses and feed chutes). These 'design problems' as well as other unrelated operational problems have largely deteriorated the financial viability of the projects".*

The consequences of these problems are lower production levels, reduced electricity savings and high costs of short-term repairs in the project, as illustrated in Table 7a.

A sensitivity analysis has now been performed, and the results are summarised in the graph given below in Figure 7b (see Table 7b of the updated PDD for the actual figures). It shows that the NPV remains negative (i.e. IRR below the discount rate 12%) in all sensitivity cases, except when we combine favourable sensitivity scenarios, such as +10% production in project and +10% revenues from sales. However, such scenarios are unrealistic to achieve consistently and, maybe more importantly, very uncertain. For example, revenues from sales have increased since the retrofit (because of higher metal prices) but, more crucially, the retrofit of furnaces has resulted in a net decrease in production. This means the project has resulted in significant losses compared to the baseline scenario (see Table a. at the end of this document).

			Furnace >	a. Fce #7	b. Fce #5	c. Fce #6	d. Fce #1	e. Fce #3		SOURCE
0.	Investment cost		R	**17,238,000**	**45,000,000**	**20,000,000**	**20,000,000**	**18,000,000**	A	PDD table 6 (investment costs)
1.	Increased availability	Production in the baseline	tSiMn/yr	39,396	37,767	20,337	19,441	19,326	B	PDD table 9 (Qp historic)
		Production in project vs baseline	%	100%	100%	100%	100%	100%	C	Production level expected to be equal in bsl and project (see PDD step 4)
		=> Additional production in project	tSiMn	-	-	-	-	-	D	D=B*(C-1)
		Cost of sale*	R/tSiMn	2,735	2,735	2,735	2,735	2,735	E1	PDD annex 8
		Revenues from sale**	R/tSiMn	2,835	2,835	2,835	2,835	2,835	E2	PDD annex 8
		=> Additional profit per year***	R/yr	**-**	**-**	**-**	**-**	**-**	F	F=D*(E2-E1)
2.	Electricity savings	Production in the project	tSiMn/yr	39,396	37,767	20,337	19,441	19,326	G	G=B*C
		Electricity savings per tonne produced	MWh/t SiMn	0.10	0.10	0.10	0.10	0.10	H	Optimistic expectation (see PDD step 4)
		=> Electricity savings	MWh/yr	3,940	3,777	2,034	1,944	1,933	I	I=G*H
		Cost of electricity	R/MWh	113	113	113	113	113	J	PDD annex 8
		=> Revenues from electricity savings	R/yr	**446,253**	**427,801**	**230,365**	**220,215**	**218,913**	K	K=I*J
3.	Savings on short term repair costs	Cost in baseline	R/yr	9,600,000	13,690,114	6,000,000	6,000,000	6,000,000	L	Transalloys historic data
		Savings on repair costs in project	%	24%	48%	40%	40%	40%	M	Realistic expectation (see PDD step 4)
		=> Cost savings per year	R/yr	**2,329,270**	**6,540,748**	**2,400,000**	**2,400,000**	**2,400,000**	N	N=L*M
1+2+3	Total revenues		R/yr	**2,775,523**	**6,968,549**	**2,630,365**	**2,620,215**	**2,618,913**	O	O=F+K+N
=>	Financial indicators	Net present value (NPV)	R	**(2,186,891)**	**(7,026,632)**	**(5,343,535)**	**(5,391,819)**	**(3,612,302)**	P	P=NPV(12%,A,O)
		Internal rate of return (IRR)	%	**8.1%**	**7.2%**	**3.5%**	**3.4%**	**5.8%**	Q	Q=IRR(A,O)

* Cost of sale = Cost of ore + other production costs + transport costs incurred by Transalloys

** Revenue from sale = Cost of delivered product

*** Additional profit per year is zero in the base case. However, it will be changed in the sensitivity analysis scnarios 1a and 1b

Note: Parameters highlighted in grey are those which are being changed in the sensitivity analysis

Table 7a: Financial analysis (copied from updated PDD page 17).

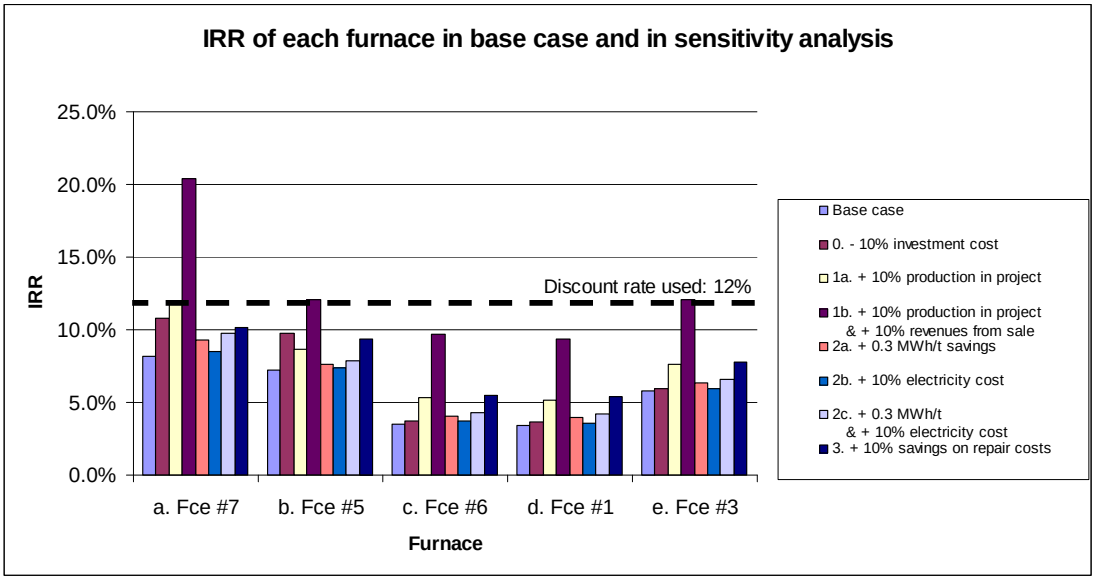

Figure 7b: Sensitivity analysis – Summary of results (copied from updated PDD page 18)

In conclusion:

- The technical performance of the project and in particular the availability (production rate) has been very low due to technical difficulties with the retrofitted furnaces. These technical difficulties were taken into account by Transalloys when deciding to go ahead with this risky project and CDM was an important element towards mitigating this risk.
- Project performance will certainly increase in future years due to better handling of the new design – metal production has an important craftsmanship aspect to it, with a lot of 'learning-by-doing' when it comes to adjusting operating parameters to a new furnace design.
- However, the sensitivity analysis above shows that, even with a combination of favourable scenarios, the NPV of the project activity remains relatively low and, perhaps more importantly, highly uncertain – due to the variation of both internal parameters (saving rates, production rate, etc) and external parameters (exchange rate, selling price).
- Consequently, any additional, secure and diversified revenue from carbon credits contributes significantly to the project viability and has been an important element in the decision to go ahead with the project in the first place.
- For instance, at a conservative USD 12/CER, CDM revenues are approximately equivalent to 100R/MWh[1], which is almost as high as the cost of electricity itself – i.e. CDM can almost double the revenue stream from electricity savings (this is due to the extremely low cost of electricity and its high carbon content). Savings have not been high so far, but are expected to increase. See more details in step 3 of section B.5 of the PDD.

[1] 1.221tCO2/MWh * 12$/tCO2 * 7R/$ = 102R/MWh, compared to an electricity price in the base case (2004 prices) of 113R/MWh (in the last four months of 2006, the price paid by Transalloys was still approximately the same, between 106 and 117R/MWh).

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Comment 2

"The screen shots of the spreadsheets used to calculate the IRR and NPV of the project activity are not clearly presented and the actual IRR of furnace 7 is not shown (p15 and p71)."

Project participants' response

The screen shots of the spreadsheets (Table 7 of the PDD submitted to registration) give the actual financial results of the project as compiled from the monthly monitoring of project performance by Transalloys ('Payback evaluation schedule'). They are compared to the 'expected' results, which are results that the project would yield given actual prices (as monitored every month since start of operation), should the project achieve the performance targets set by Transalloys: +29% (respectively +36%) increase in production, 47% (resp. 60%) savings on short term repairs and + 0.40 (resp. 0.40) MWh/t savings on electricity for furnace 7 (resp. 5).

The assumptions behind those calculations were provided in aggregate form in the PDD submitted to registration (page 15 and in Annex 8). They are presented below in the same format as the updated financial analysis and in more detail, in order to allow comparison between both analyses.

a. Fce #7		b. Fce #5			
Expected	**Actual**	**Expected**	**Actual**		**SOURCE**
17,238,000	**17,238,000**	**45,000,000**	**45,000,000**	A	PDD table 6 (investment costs)
45,826	45,826	44,592	44,592	B	Highveld max historic production (higher than PDD 7yr avg)
129%	80%	136%	82%	C	Expected: Highveld initial targets Actual: monitored data since operation start
13,424	(9,290)	15,892	(7,890)	D	D=B*(C-1)
2,735	2,735	2,735	2,735	E1	PDD annex 8
2,885	3,041	3,674	3,610	E2	Average of actual historic prices
2,013,549	**(2,851,144)**	**14,932,000**	**(6,907,603)**	F	F=D*(E2-E1)
59,249	36,536	60,484	36,702	G	G=B*C
0.40	(0.16)	0.40	(0.31)	H	Expected: Highveld initial targets Actual: monitored data since operation start
23,700	(5,718)	24,194	(11,250)	I	I=G*H
121	109	120	109	J	Expected: Highveld initial expected price Actual: Average of actual historic prices since operation start
2,859,171	**(625,700)**	**2,898,516**	**(1,221,554)**	K	K=I*J
9,600,000	9,600,000	13,690,114	13,690,114	L	Transalloys historic data
47%	24%	60%	64%	M	Expected: Highveld initial targets Actual: monitored data since operation start
4,514,400	**2,329,270**	**8,214,068**	**8,760,238**	N	N=L*M
9,387,120	**(1,147,574)**	**26,044,584**	**631,081**	O	O=F+K+N
34,374,906	**(21,474,955)**	**97,897,236**	**(36,832,885)**	P	P=NPV(12%,A,O)
54.0%	**#DIV/0!**	**57.5%**	**-22.8%**	Q	Q=IRR(A,O)
	[1]		[2]		

[1] The IRR cannot be calcuated because revenues are negative every year

[2] There was a mistake in the previous PDD for the calculation of the actual NPV/IRR of furnace 5

Table a: Financial indicators for furnaces 7 and 5 using i) target project performance ('expected') and ii) actual project performance ('actual'). This tables details the assumptions behind table 7 of the PDD submitted to registration.

It shows that in theory, the project could yield great benefits from increased production, savings on electricity and on short-term repairs. However, these are targets that Transalloys is aiming towards, rather than expectations on which to base an investment. The expectations on which the investment was based are the ones used for the updated financial analysis (Table 7a); Highveld has not even reached these expectations yet, let alone the targets, as illustrated by the 'actual' results of the project in the table above.

Note that the IRR of furnace 7 was not shown in the PDD submitted to registration because it was simply not possible to calculate it, given that revenue stream in every year was negative.

We hope that the comments above address the issues that have been raised. However, if there is any further information required we would be very happy to provide it.

Yours sincerely

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