

Ref : SML/VT/2007-08

Date : 07 August 2008

To
Project Registration Team Member
UNFCC

Sub. : **Request for Review Project No. 1702 – “SMC WHRB CPP”**

Dear Sir

We are pleased to submit hereby reply for the review points for your kind consideration.

Thanking you & With regards

Mool Chand Agrawal

Point -1 :

Further clarification is required how the investment comparison analysis has been validated by the DOE, in particular the appropriateness of comparing : (a) a 16 MW coal based power plant with 95% PLF with the project activity with 66% PLF, and (b) backup power cost for the project activity with no back-up cost for the alternative.

REPLY:

We are herewith submitting our reply in broken up form of questions and answers

(a) **Justification for comparison with 16 MW coal based power plant, as why it is appropriate:**

The size of the project activity is 16 MW whereas the size of the total captive power plant is 33 MW, which comprises of a 17 MW Coal based AFBC. Hence in absence of the project activity the entire power requirement would have been generated by the 33 MW coal based AFBC captive power plant only.

Thus we wish to submit that the proposed Project Activity is being implemented as a partial replacement of coal based captive power plant because in absence of the project activity only the coal based captive power plant would have been established with 33 MW capacity. The prevailing practice and common practice in the region reveal that the coal based captive power plant is the first and foremost choice, and financially most attractive. **Thus the comparison only with coal based power plant is appropriate.**

The comparison for levelized cost of generation could have been made between the following options of different capacities of the projects:

- 1) Cost of generation from an independent coal based power plant, connected to the Grid. (these are normally of much higher size in hundreds of mega watt)
- 2) Cost of generation from a total 33 MW coal based captive power plant. (which would have been implemented in absence of the project activity)
- 3) Cost of generation from a 16 MW coal based captive power plant, which is equivalent to the capacity of project activity.

The comparison with grid power generation cost such as, NALCO, is found to be less than Rs. 1.10 per unit, as evident from the power export tariff approved by the State Electricity Regulatory Commission at this rate (The rate includes 14% allowable margin to the power producer) hence the cost of generation would definitely be less than this.

But for making a fair comparison between one of the baseline scenario (most attractive) and project scenario, we have considered the situation, where in the power requirement would have been met by the coal based power plant of atleast the equivalent capacity (i.e. 16 MW), whereas in absence of the Project activity, capacity the total 33 MW CPP would have been based on Coal.

Therefore making a comparison of levelized cost of generation from project scenario (i.e. 16 MW WHRB without CDM support) with the 16MW equivalent capacity coal based power plant is more conservative than making comparison with 33 MW coal based power plant.

Appendix-II at page no. 70 and 71 of PDD the comparison between project scenario with 16 MW and 33 MW both have been given. By which it is evident that the levelized cost of generation from 33 MW coal based captive power plant is much less than 16 MW coal based captive power plant.

Hence the most appropriate and most conservative investment comparison analysis for levelized cost of generation is with 16 MW coal based power plant.

(b) Justification for the considering the 66% PLF for WHRB based power plant:

- The lower capacity utilization of a Sponge Iron Plant is the first and major reason for the lower capacity utilization for WHRB power plant. Because the power generation in WHRB power plant is directly linked to the Sponge Iron Plant operation and capacity utilization. Whereas the AFBC power plant has the total freedom to operate as per the requirement. The WHRB power plant also faces a number of barriers which influence the generation of power in WHRB (Refer to the PDD – Page No.22) whereas the coal based AFBC has no such barriers. Hence the best capacity utilization with WHRB, without CDM support would be around 60 to 65%. Hence 66% PLF (which is a better PLF) has been considered for the sake of financial comparison for WHRB based levelized cost of power generation. Even on going through the number of registered projects which have sought issuance during the past years also reveal that normal capacity utilization of sponge iron based WHRB is between 50 to 60%. (refer to **Annex-1.a**).

(c) Justification for consideration of 95% PLF for coal based power plant:

The coal based captive power plant of this size have no Technological and other barriers, hence they can be operated easily up to 95% & above PLF. Hence, the considered PLF is most appropriate for the sake of making economic comparison between the two scenarios. On going through a number of publicly available disclosure also it will be revealed that it is comfortably possible to achieve more than 95% PLF in thermal power plant. This may be appreciated that in a coal based captive power plant of this size (17 MW) where the boiler has higher steam generation capacity of 80 tph than the full load required steam capacity of 68 tph (considering 4 tph per MWh) and also where the turbine and generators design allow to generate upto 10% excess power than the design level thus at several moments plant is able to operate even at 105% to 110% level. Also in this coal based power plant there is no crisis of raw material as well there is no crisis of consumption of generated power or evacuation of generated power. Therefore the capacity utilization is also not hampered due to this. The 95% PLF has been calculated based on 350 working days only whereas the captive power plant can also operate for 355 day. Therefore, it is easily possible to generate power with 95% PLF in coal based AFBC.

The power plant supplier had also confirmed that it is possible to easily achieve up to 100% PLF on annualized basis for coal based AFBC, whereas, it is not possible to have more than 60 to 65% PLF with WHRB Power Plant (refer to **Annex 1.b** –, the other publicly available information such as **Annex-1.c-**, **Annex-1.d**) also reveal that it is possible to have more than 95% PLF in coal based thermal power plant.

(d) Justification for the backup power cost consideration with WHRB:

The operational fluctuation in WHRB Captive Power Plant may make the total generated power useless for the captive utilization, if a proper synchronized backup power support is not available to make up the supply deficiency due to reduced WHRB generation (fluctuations). Since the generation of Power from WHRB can not be regulated like in AFBC. Therefore in order to make the WHRB generated power useable; it requires the backup power support from the Grid. Therefore **only the cost of assurance to draw power from the Grid** (minimum demand charges/ contract demand), has been considered as cost of “backup power” in the cost of generation of power, whereas if the actual impact (cost) of importing deficient power is calculated towards the cost of deficient power required to be purchased from the Grid then the average cost of power due to WHRB will be still quite higher than considered by us. Because to make up the 29% PLF deficiency (95% - 66%= 29%), required for smooth captive load operation the power if imported from the grid would cost @Rs.2.90/kWh only towards energy charges as per the tariff order enclosed as **annex 1.e.** (this energy charge does not include the demand charges which is already considered towards the cost of assurance to draw power from the grid as backup power cost), it is therefore evident that we have adopted more conservative approach by considering only the cost of assurance to the draw power from the grid as backup power cost.

(e) Justification for not considering any backup power cost with Coal based power plant :

Since power generation from AFBC can be most comfortably regulated as per the demand and requirement also there is no fluctuation in AFBC power generation hence there is no need to have any backup power from the Grid. The explanation at para (c) also provide evidence that more than 95% PLF can be achieved therefore there is no need to have any backup power drawl assurance from the grid.

Therefore there is no cost considered towards this in the calculation made for sake of comparison.

Thus the cost of backup power considered is most appropriate.

Point- 2 :

The DOE is requested to provide further explanation for the delay in submitting the project for validation to show that CDM revenues were considered essential in the decision to invest in the project activity. The response should provide a detailed timeline of project implementation with relevant, preferably third-party evidences.

REPLY:

Kindly note that as per the paragraphs 43 to 52 of CDM modalities and procedures; we were not able to find any fixed (prescribed) procedure for providing the evidence of CDM consideration and also we are not able to find any stipulation of time limit within which the Project Activity has to be submitted for the Registration.

Therefore the decision dated 18/05/2003, in which CDM revenue were considered essential to implement the project was taken as per the usual decision taking process and recorded by the company in the form of board resolution. As such the company has provided the copy of the agenda note and extract of board resolution passed by the board of directors of the company as an evidence of the same, to the DOE. The effective steps to implement the project activity were started by placing order for waste heat recovery boiler on 09/07/2003. Subsequently the internal team of the company started working on the preparation of required documents for applying for CDM. It was then known that the detailed procedures and methods for preparation of documents and submission to the CDM were under development by UNFCCC. Therefore we were waiting for development of these methods and procedures. During this period we were busy in implementation of project and in seeking various clearances from Government agencies and departments. Since, the project is located in backward area of Orissa state where a number of infrastructural facilities were lacking and due to sudden rush in

sponge iron sector there was crisis of almost everything which required extra ordinary efforts and attention to implement the basic project itself i.e. Sponge Iron Kilns, which was commissioned on 01/12/2004.

The company approached to the Village local government for issuance of NOC for the project activity, for which a meeting with gram sabha (local village government) was held on 26/01/2006 to appraise about the project activity and for local public consultation and to obtain the NOC. The Village local government issued NOC for the project activity on 27/05/2006. In the mean time when our internal team found it difficult to complete the documents, we appointed M/s. Indus Technical and Financial Consultants Ltd. as our CDM consultants on 08/07/2006. The consultant demanded all the legal clearances for proceeding in the matter. We had applied for obtaining permission to establish from State Pollution Control Board for the entire capacity of the project which was granted only on 30/12/2006. We were also informed by head of our internal team that we can not submit the application for obtaining approval from the Government of India, without having all the clearances from pollution control board and other legal authorities and EIA clearance. It was also informed that without the approval of Government of India we can not submit the project to UNFCCC as a CDM project. Hence we were making efforts to obtain the required clearances from state government which was sanctioned on 30/12/2006 (copy of permission enclosed at **Annex-2.a**).

We had applied for Host Country Approval on 18/11/2006 in response to which the MOEF GOI vide letter No. F No.4/23/2006-CCC dated 11/01/2007 asked to submit the following documents (copy of letter is enclosed as **Annex- 2.b**) :

- a. *Proof (“Board Resolution”) to the effect that CDM was taken into consideration at the time of inception of the project.*
- b. *All statutory Clearance (PCB, EIA etc.)*
- c. *Documents relating to Stakeholders Consultation.*

We submitted the required documents immediately on receipt of the above mentioned letter.

Then after being satisfied that we had taken the CDM benefits under serious consideration at the time of inception of the project and after submission of the clearances (i.e. State Government Pollution Control Board Permission to Establish and Stake holders consultation documents) the MOEF, Govt. of India granted us Host Country Approval on 12/03/2007.

We received offer from SGS on 30/10/2006 and TUV on 07/11/2006 and BVQI on 13/11/2006 and thereafter placed order to validate on dated 24/01/2007 to SGS. The project design document was webhosted on dated 11/04/2007 to 10/05/2007.

A. SERIOUS CDM CONSIDERATION;;

It may also be appreciated that it was emphasized in EB-38 (12 to 14 March 2008,Para-59) “...provide evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity”

The above requirement was emphasized in March 2008, whereas the decision to implement the project activity was taken much earlier than this date and before the date of the approved methodology. Therefore the seriousness of the CDM considerations has to be relied only based on those documents & prevailing circumstances.

The seriousness of the CDM consideration is reflected with this fact that even though;

- (a) the process to set up a waste heat recovery power plant was quite new, with very little experience, with very less experts available in the field and was having a number of technology barriers.
- (b) the project was financially not attractive.
- (c) we had before us, much better financial return options available to invest (such as expansion of steel & sponge, coal based captive power plant etc.) than the project activity, but we went ahead with the implementation of the project activity only due to considered returns from CDM support. The comparative IRR calculations shows no financial attraction in the project activity without CDM support as compared to Coal based power

plant, the effect of likely CDM benefits as given in Appendix IV of PDD help to improve the attraction.

- (d) In addition to this CDM additionality procedure do also indirectly cross check whether said CDM project is implemented without CDM support requirement or with CDM support requirement.

As being an Industrial unit Technical feasibility & economic attractiveness are the first priority of investing on any project. The proposed project activity was full of technological barriers & uncertainties as well as being financial not attractive; thus WHRB project activity was not in our priority of the projects in decision making context. Because at that time the company had enough investment opportunity already available before it to invest in more & more sponge iron making, steel making opportunities which had been giving much better & higher returns than generating power. As it is already mentioned in PDD at Page No.13 & 14 that continuation of current situation i.e. to draw power from the grid was one of the available alternative option plausible as an alternative to the project activity, and also as discussed in the PDD that the initial capital cost to draw power from the grid was much less and did not required any time, hence it was easily and absolutely possible for the company to draw more power from the grid by investing nominal capital amount and could have invested the capital amount for expansion of Sponge Iron and Steel Plant rather than investing in WHRB power plant.

However only on evaluating likely CDM support, company had decided to go for putting up Project Activity with seriously considering the CDM benefits.

B. REASONS FOR DELAY

Since it was not possible to get the PDD prepared before the approval of methodology therefore the delays caused up to end of July 2005 was not in our hands. Simultaneous to this we were in process of seeking number of clearances for ongoing implementation of sponge iron, power and steel making facilities as well as arranging for required finances, procurement of capital equipments, implementation, execution, commissioning etc. We were also delayed for want of a suitable consultancy company to prepare the documents for CDM, after our team was not able to complete the documentation.

Chronological History for Project

1.	CDM Consideration	18/05/2003
2.	Purchase Order for 8 MW TG	11/06/2003
3.	Purchase Order for first WHRB Boiler	09/07/2003
4.	Application for seeking permission to establish from State Pollution Control Board	11/11/2003
5.	Permission to Establish received from State Pollution Control Board (for first phase)	29/01/2004
6.	Billing Schedule submitted by Cethar VEssles and approved by SMC Power Ltd. For 38 tph Boiler (First Boiler)	30/07/2004
7.	Consent to Operate received from State Pollution Control Board (for first phase)	17/08/2004
8.	Approval of Methodology for WHRB by UNFCCC	08/07/2005
9.	IEM from Ministry of Commerce and Industries, Govt. of India	21/10/2005
10.	Gram Sabha resolution (26/01/2006)	26/01/2006
11.	Application for Permission to Establish to State Pollution Control Board (2 nd Phase)	04/02/2006
12.	Purchase Order for 25 MW TG	09/02/2006
13.	Order for Second WHRB Boiler to Thermal System Hyderabad	10/02/2006
14.	Purchase order for AFBC	27/02/2006

15.	NOC from Sarpanch	27/05/2006
16.	Application for Environment Clearance from Ministry of Environment and Forest	21/06/2006
17.	Search for and Appointment of another consultant (Indus Technical & Financial Consultants Limited)	08/07/2006
18.	Public Hearing / Public Consultation	12/09/2006
19.	Application for Host Country Approval	18/11/2006
20.	Permission to Establish (2 nd Phase) – received from State Pollution Control Board which was required essentially to obtain HCA	30/12/2006
21.	letter from DNA for submission of documents to establish serious CDM consideration, statutory clearances etc.	11/01/2007
22.	Validator Appointment	24/01/2007
23.	Host Country Approval	12/03/2007
24.	Webhosting of PDD for International Stake holders comments	11/04/2007
25.	Environment Clearance received	24/04/2007
26.	Commissioning of 25 MW Power plant	23/12/2007

The above chronological order justifies that delay was occurred beyond our control. We have provided the copy of the documents to the DOE.

The comparative IRR analysis calculated and webhosted with and without CDM support as given in PDD page No. 70 reveal that IRR would improve from 10.20% without CDM support to 22.06% with CDM support. This established show the revenues were found essential to decide to invest in project activity.

On going through the above it is conclusively evident that the project activity was implemented only because of expected CDM revenue. It was implemented in phased manner which was started on dated 09/07/2003 with the ordering of first boiler and was completed on dated 23/12/2007 by commissioning of the 25 MW Turbine with Second boiler. The delay was incurred due to required legal sanctions and clearances, in the mean time the company was parallally making all its efforts to get the project activity CDM documents prepared, validated, and submitted for registration. Thus the delay incurred in the above is beyond the control of the company, hence is justified.

Point- 3:

Further clarification is required on the baseline alternative considered, as the PDD and the validation report do not refer to the same baseline alternative

REPLY:

Kindly refer to page no. 14 of the PDD at which analysis of various plausible options reveal that only two alternatives i.e. first to draw power from the grid (alternative-2 and alternative-8), second to generate power from coal based captive power plant (alternative-5) are feasible options. Therefore to select the most conservative option the “combined tools for demonstration of additionality and assessment of baseline” was used, as per requirement of methodology and as given in PDD page No. 14 to 16, which reveals that the grid being more conservative in baseline has to be selected (refer to PDD page No.16).

Validation report page no. 9 also refers to the same alternatives only in place of coal fossil fuel has been used. As a conservative approach the validator has opted for selecting grid as baseline. The calculated EF_{CO2} for coal based captive power plant was 1.293 tCO₂/MWh whereas EF_{CO2} for Eastern Regional Grid was found 1.01 tCO₂/MWh. Therefore we feel that there is no difference in the consideration of baseline.