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Att: CDM Executive Board

Your ref.:
CDM Ref 1729

Our ref.:
MLEH

Date:
7 August 2008

Response to request for review “Ma Steel (old plant) CDQ and waste heat utilization project” (1729)

Dear Members of the CDM Executive Board,

We refer to the requests for review by three Board members concerning DNV's request for registration of project activity 1729 “Ma Steel (old plant) CDQ and waste heat utilization project” and would like to provide the following initial response to the issues raised by the requests for review.

***Comment 1:** The DOE shall describe how the reliability of the input values used in the investment analysis has been validated in accordance with the requirements of EB38 paragraph 54(c).*

DNV Response:

As required by paragraph 54 (c) of EB 38 report and as stated in our validation report, DNV has validated the consistency and appropriateness of the input values available at the project investment decision making stage.

As stated in our validation report, the investment analysis is mainly based on the Feasibility Study Report (FSR) of October 2005. For the power tariff the actual power tariff for power purchased from the grid in 2005 as set by the East China Power Grid was selected instead of the tariff given in the FSR. This tariff is higher than the tariff assumed in the FSR and thus results in a more conservative estimation of the project IRR. As a result of applying another tariff, also the projects electricity consumption costs were altered in the PDD compared to the values used in the FSR. Finally, the steam consumption costs estimated in the FSR were corrected and sufficient justification for this correction was provided during the validation.

The FSR was developed by an accredited third party, and was approved by the local Development and Reform Commission on 8 January 2007. This date was also chosen as the project starting date.

Although the FSR was developed more than one year before the project starting date, its approval at the time of the project starting data is considered a confirmation that the data in the FSR was still valid at that point of time. Both the FSR and its approval have been received and checked by DNV. DNV has also cross-checked the input data in the investment analysis against the FSR and found them correct. The input values to the investment analysis was also included in an analysis of similar projects validated by DNV, and were found to be within a reasonable range for the sector and location of the proposed project.

Comment 2: *Since the coking speed of coke plants - and hence the operating time of the CDQ – can be varied by far more than + or - 10% the DOE shall explain how it verified that the sensitivity analysis of the investment analysis is appropriate.*

DNV Response:

As stated in our validation report, the project's IRR reaches the benchmark when the capacity factor increases by 21.7%. The capacity factor of 90.4% is taken from the FSR, and a 21.7% increase would result in a capacity factor above 100%. As analysed in detail in the PP's response, the electricity output from the CDQ is unlikely to increase significantly above the designed capacity. The PP states two possible scenarios where the coking operational parameters could be changed in a way that would impact the power generation from the CDQ facility:

1. A change in the throughput of the coking oven, causing a variation in the amount of available waste heat over a certain period of time.
2. A change in the coke oven battery operational hours, resulting in a change in the number of hours in which waste heat can be utilized for heat production.

A change in the throughput of the coking oven is possible and would result in more waste heat, but may have several negative implications to the operational practice: poorer quality coke, reduced life time of the coke oven battery and higher emissions from the coking process. These implications have been evidenced by the producer of the coke plant (Siemens), provided to DNV by the PP. Furthermore, the PP commissioned an assessment from Harworth Power, in which it is stated that the anticipated annual gross power generation from the project is 237.6 GWh. If the waste heat recovery boilers are run at maximum capacity at full time, the maximum power generation may increase to 244.8 GWh (a 3% increase). According to Harworth Power, this is unrealistic as it would demand a significant change in the process, along with an increased need for maintenance. The assessment has been provided to and verified by DNV.

An increase in the coke oven battery operating hours would imply the coke oven to operate for more hours than designed. According to the PP and Harworth Power, this is not likely as the estimate in the FSR is already optimistic. This is also supported by the actual electricity generation for the first six months of 2008, provided by the PP, showing a generation of about 25% of the expected level.

Comment 3: *Further clarification is required on how the DOE has validated the baseline determination, in particular that the continuation of grid electricity imports is a more economically attractive alternative than the project activity undertaken without CDM.*

DNV Response:

As stated in the validation report, the proposed project activity without CDM has an IRR of 8.59% and is not economically attractive when compared to the relevant benchmark of 11% that has been based on the *Economic Analysis Method and Parameters for Project Construction*, (version 2) published by the National Development and Reform Commission and the Ministry of Construction in 1993 and valid to August 2006.

The possible alternative scenarios in the absence of the proposed project activity have been discussed in the validation report. The baseline scenario is that an equivalent amount of electricity would, in the absence of the project activity, have been generated by the operation of grid-connected thermal power plants and by the addition of new generation sources.

The approach adopted is in line with the "Tool for the demonstration and assessment of additionality" and the EB 39 Report Annex 35 guidelines as further explained below. Following sub-step 2(a) of the tool, since the proposed project generates financial and economic benefits

through the sale of electricity other than CDM-related income, the simple cost analysis (Option I) was not applicable and the benchmark analysis (Option III) was chosen to confirm the project's additionality.

The use of a benchmark analysis is supported by the EB 39 Report Annex 35 "*Guidance on the assessment of investment analysis*" stating that in a situation such as this project activity, an investment comparison analysis is not appropriate as the alternative to the project activity is to make no investment and take the supply of electricity from the grid:

"If the proposed baseline scenario leaves the project participant no other choice than to make an investment to supply the same (or substitute) products or services, a benchmark analysis is not appropriate and an investment comparison analysis shall be used. If the alternative to the project activity is the supply of electricity from a grid this is not to be considered an investment and a benchmark approach is considered appropriate."

DNV understands that since one of the alternatives to the project activity is continued import of electricity from the grid, the project developer's decision should be to invest in the project activity or not invest (i.e. the project developer does not require the project activity to provide its limited electricity demand as it can be sourced from the grid). The following elaboration in the aforementioned EB 39 Report Annex 35 is also found relevant by DNV:

*"The benchmark approach is therefore suited to circumstances where the baseline does not require investment or is outside the direct control of the project developer, i.e., cases where the choice of the developer is to invest or not to invest."*¹

However, in order to further illustrate succinctly that continuation of grid electricity imports is more economically attractive than the project activity undertaken without CDM, a comparative NPV calculation has been conducted by the project proponent and reviewed by DNV. The comparative calculation adopted here is based on calculation of the NPV between a) "*The project activity undertaken without CDM*" and b) "*Continuation of grid electricity imports*":

The comparative NPV calculation was conducted by comparing (1) the cost of continuing the baseline activity of importing electricity to (2) the cost of implementing the project without CDM revenue. In the second NPV calculation, no revenues were included for the avoided power supply costs in order to appropriately compare the NPV of option 2 with the NPV of option 1, purchase from the grid. The discounting rate applied was the benchmark rate of 11%.

The NPV for the "*continuation of grid electricity imports*" has been calculated to be minus 47.35 million RMB. The NPV for "*The project activity undertaken without CDM*" has been calculated to be minus 53.47 million RMB.

The result of the comparative NPV calculation thus indicates that the "*continuation of grid electricity imports*" is more economically attractive than the "*project activity undertaken without CDM*". This forms the basis for the baseline scenario to be the "*Continuation of equivalent import of electricity from North China Power Grid*" without the use of waste heat for electricity production.

¹ EB 39 Report Annex 35 "*Guidance on the Assessment of Investment Analysis*" page 3

We sincerely hope that the Board accepts our aforementioned explanations.

Yours faithfully
for DET NORSKE VERITAS CERTIFICATION AS

A handwritten signature in blue ink that reads "Michael Lehmann".

Michael Lehmann
Technical Director
DNV International Climate Change Services