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Response to request for review
Power generation from coking waste heat utilization project at Taiyuan Gangyuan Coking & Chemicals Co., Ltd in China (1707)

Dear Members of the CDM Executive Board,

We refer to the requests for review by four Board members concerning DNV's request for registration of project activity 1707 "Power generation from coking waste heat utilization project at Taiyuan Gangyuan Coking & Chemicals Co., Ltd in China" and would like to provide the following initial response to the issues raised by the requests for review.

Comment 1: *Considering that the investment being made is in the power industry further substantiation that the benchmark reflects the risk profile of this project activity is required.*

DNV Response:
As stated in our validation report, the benchmark chosen for the project activity is the benchmark financial IRR for the coking industry as per the *Economic Assessment Method and Parameters for Project Construction* 03 edition (2006), hereafter referred to as "Economic Assessment Methods".

The Economic Assessment Methods states that when a project owner invests in a project with key characteristics of another sector rather than that of its own core business, the sectoral benchmark of its own core business should be applied[1]. Although the proposed project is a power generation project, given that the core investment focus of the project owner is the coking industry, the sectoral benchmark of the coking industry should be applied in decision making, which is 12%. This benchmark was considered appropriate by DNV, even though the sectoral benchmark of the coking industry is higher than the sectoral benchmark of the power industry. The project owner has little experience in power generation adding significant risk to the investment decision. It is in our opinion thus reasonable to assume that the project owner would expect at least the same returns as would be expected from an investment in their core business. Furthermore, since the electricity generation project relies on the coking facility's production output to be maintained, the proposed project is exposed to very similar risks as of the coking industry and the sectoral benchmark of power industry should not apply.

[1] Methods and Parameters for Economic Assessment of Construction Project (version 3), published by China's National Development and Reform Commission and Construction Ministry, December 2006, paragraph 2, point 2, page 197.

Comment 2: *The DOE is requested to clarify the discrepancy in the benchmark of 12,0% proposed for this project, while for another project connected to the coke production sector (project 1726) another benchmark of 11% is validated as being correct, being the financial IRR for the iron industry (The Economic Assessment Method and Parameters for Project Construction, 2nd version, 1993, valid to August 2006)*

DNV Response:
The benchmark for this project (1707) was, as explained in question 1 above, determined from the Economic Assessment Methods as 12%, suited for the coking industry. The project owner is a small-scale private company, which is typical for the coke industry in China. The project owner of project 1726 Maanshan Iron & Steel Co., Ltd. is in contrast a large-scale state owned enterprise which is more representative for the iron & steel industry in China. The core business of this enterprise is iron & steel production, and the suitable benchmark for this project owner is that for the iron & steel industry. DNV would like to refer to the Economic Assessment Methods, as explained in our response to question 1 above, where it is stated that when a project owner invests in a project with key characteristics of another sector rather than that of its own core business, the sectoral benchmark of its own core business should be applied. As the Economic Assessment Methods states different benchmarks for the coking and the iron & steel industry, it is suitable that the two projects use different benchmarks.

Comment 3: *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 now required by paragraph 54 (c) of EB 38 report and again as stated in our validation report, DNV has validated the consistency and appropriateness of the input values during the project investment decision making stage.
As stated in our validation report, the investment analysis is mainly based on the revised feasibility study report (FSR) of December 2005, while the starting date of the project activity is 28 March 2006, as evidenced by the approval of the FSR. Therefore, the revised FSR was three months old and still valid at the time of the decision to proceed with the investment in the project activity. Both the FSR and its approval have been received and checked by DNV. The input values to the investment analysis was also compared with the values reported for similar projects validated by DNV, and were found to be within a reasonable range for the sector and location of the proposed project.

Comment 4: *The PP/DOE shall provide information on the maximum and minimum production capacity design rate of the coke production and apply these values to the sensitivity analysis.*

DNV Response:
By checking the FSR, DNV has verified the maximum and minimum production capacity design rate of the coke production to be 60 000 tonnes/year and zero respectively. At maximum production capacity, the IRR for the project is slightly above 9%. By increasing the production to 14.67% above the estimated maximum, the IRR crosses the benchmark. This is, however, not feasible according to the FSR. DNV refers to the PP's response for a more elaborated answer.

Comment 5: *The DOE is requested to provide further explanation 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.*

DNV Response:
As stated in our validation report, the environmental impact assessment (EIA)[2] of Power generation from coking waste heat utilization project at Taiyuan Gangyuan Coking & Chemicals Co., Ltd was approved by the Environmental Protection Bureau of Shanxi on 19 June 2001. The feasibility study report (FSR)[3] was approved by the Development and Reform Commission of Shanxi Province on 28 March 2006. By checking the FSR, DNV verified the investment analysis for the project which demonstrates that the project is not financially viable without the income from CERs, considering the coking sector benchmark of 12%. A clarification letter from the Shanxi Province Agenda 21 Sustainable Development Office[4], dated April 2006, listed the proposed project as under development as a CDM project.

A timeline for the CDM consideration process is shown below:

June 2001	Environmental impact assessment
December 2005	Feasibility study report completed
28 March 2006	Feasibility study report approval
April 2006	Clarification letter from Shanxi Province Agenda 21 Sustainable Development Office, confirming that the proposed project applies for CDM.
April 2007	Validation starts
10 April 2007	Construction agreement signed
5 May 2007	PDD published

Comment 6: *Further clarification is required on how the DOE has validated the project activity start date in accordance with the CDM Glossary of terms.*

DNV Response:
The Glossary of CDM terms states that the starting date of a CDM project activity is the earliest of the dates at which the implementation or construction or real action of the project activity begins. During the validation of the proposed project activity, the date of the approval of the FSR was determined to be a conservative starting date, as the construction had yet not started. According to DNV's current practice, the date of the construction agreement would probably have been chosen instead of the date of the approval of the FSR. The construction agreement was signed 16 months after the FSR was completed and about a year after the approval of the FSR. DNV has compared the input values for the investment analysis, taken from the FSR, with other similar projects and can confirm that they are in a similar and reasonable range. Hence, this analysis demonstrated that the input values applied by the project had not materially changed between the starting date stated in the PDD and the date of the construction agreement.

Comment 7: *Further clarification is required on how the DOE has validated the baseline determination, in particular that the continuation of grid electricity imports is more economically attractive than the project activity undertaken without CDM.*

[2] The EIA of Power generation from coking waste heat utilization project at Taiyuan Gangyuan Coking & Chemicals Co., Ltd project by the Shanxi Province Chemical Design Institute, and the approval letter by the Environmental Protection Bureau of Shanxi on 19 June 2001.
[3] Feasibility study report dated December 2005 approved by the Development and Reform Commission of Shanxi Province on 28 March 2006.
[4] Clarification letter from the Shanxi Province 21 Agenda Sustainable Development Office (under the Provincial Development and Reform Committee), April 2006.

DNV Response:

As stated in our validation report, the proposed project activity without CDM has an IRR of 9.22% and is not economically attractive when compared to the relevant coking industry benchmark of 12%. Therefore, the baseline scenario is that the project owner will continue to buy electricity from the grid and emit waste heat in the atmosphere.

In further confirming the additionality of the project, DNV found that the approach adopted was 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. The investment comparison analysis (Option II) should be applicable to the projects where similar investment alternatives are available. However, since the proposed project activity without CDM is not economically attractive, Option II was also excluded and the benchmark analysis (Option III) was chosen to confirm the project's additionality.

It should be noted here that the EB 39 Report Annex 35 "*Guidance on the assessment of investment analysis"* provides further relevant guidance 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 alternative 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."[5]

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*":

a) "*The project activity undertaken without CDM*": In the NPV calculation for this alternative scenario all of the coking facility's electricity production is exported to the grid. The electricity requirement for the coking facility is then purchased back from the grid. The NPV for "*The project activity undertaken without CDM*" has been calculated to be minus 69.23 million RMB.

b) While for the "*Continuation of grid electricity imports*", the calculation of the NPV is based on the following assumptions:

[5] EB 39 Report Annex 35 "Guidance on the Assessment of Investment Analysis" page 3

1. the project owner cannot find an alternative investment which is more economically attractive than the project activity undertaken without CDM, and
2. the project owner's capital lays dormant.

These assumptions are considered conservative by DNV. The NPV for the "*continuation of grid electricity imports*" based on these conservative assumptions has been calculated to be minus 47.48 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.

We sincerely hope that the Board accepts our aforementioned explanations.

Yours faithfully
for DET NORSKE VERITAS CERTIFICATION AS

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