Response to request for review
Chongqing Iron & Steel Co. Ltd. Waste Gas to Electricity Project (1689)

Dear Members of the CDM Executive Board:

We refer to the requests for review raised by three Board members concerning DNV’s request for registration of project activity 1689 “Chongqing Iron & Steel Co. Ltd. Waste Gas to Electricity Project” and would like to provide the below initial response.

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

**DNV response:**

The benchmark rate is determined based on official guidelines widely used for investments in the iron and steel sector in China: according to the *Economic Assessment of Construction Projects, Methods and Parameters, Third Edition* (2006)\(^1\), the financial benchmark rate of return (after tax) for investments within the iron and steel sector in China is set at 13%.

It is DNV’s opinion that the selection of this sector benchmark in the context of the “Chongqing Iron & Steel Co. Ltd. Waste Gas to Electricity Project” is reasonable since the project activity is a captive power plant, and hence all waste gas powered electricity generated by the project is being used for iron and steel production, the core business of the company. The power generation facility could not have been developed by another entity. Thus, it is likely that the company will apply the same investment threshold for this waste gas based electricity generation project as for any investment/project related to the core business.

**Issue 2: The DOE shall confirm how it has validated the requirements of EB 38 paragraph 54(a), in particular, that the FSR has been the basis of the decision to proceed with the investment in the project.**

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DNV response:

In line with the requirements of EB38 paragraph 54 (A), DNV has assessed the input values of the financial analysis using a 4-step approach:

**Step 1: Assessment of the sources of the input parameters**

Input values in the financial analysis have been sourced from the two preliminary design reports (PDR)\(^1\) covering each of the two components of the project activity, the Condensing Steam Generator (CSG) and the Combined Cycle Power Plant (CCPP). The exceptions are

i) the selected electricity tariff, which is based on the actual electricity price which is higher and thus more conservative than the electricity price expected at the time of decision making and considered in the PDR, and

ii) the waste gas processing cost, which is taken from detailed breakdown (invoices and contracts) of the investment and which is lower and thus more conservative than the value given in the PDR.

For the CSG, the PDR was developed by Chongqing Iron and Steel Design Institute in May 2004 and approved by the Economic Committee of Chongqing City on 18 August 2004. For the CCPP, the PDR was developed by Chongqing Iron and Steel Design Institute in March 2006 and approved by the Economic Committee of Chongqing City on 3 April 2006.

The input parameters used in the financial analysis can thus be considered information provided by independent and recognised sources, and for the values derived from other sources, more conservative values have been applied.

**Step 2: Confirmation that the values used in the PDD are fully consistent with the PDR/FSR**

DNV has verified that the input values derived from the PDRs are consistent with the ones available in the PDRs and verified the parameters derived from other sources.

**Step 3: Assessment of the period of time between the finalization of the FSR (or PDR) and the investment decision**

Reference is made to the project participants’ response to the requests for review.

For the CSG, the PDR was approved on 18 August 2004, while the start date of the project activity (signature of construction contract for CSG) was 7 April 2005. For the CCPP, the PDR was approved on 3 April 2006, while the construction start date was 6 April 2006.

Hence, the lag between the PDR approvals and start of activity was about 8 months and 0 months, respectively, for the two components. Given this relatively short period of time between approval of the FSR and the decision to proceed with the project activity it is unlikely that the input values would have materially changed and that it is thus reasonable to assume that the PDR has been the basis of the decision to proceed with the investment in the project.

**Step 4: Cross-check the parameters used in the financial analysis with the parameters used by other similar projects**

The input parameters used in the financial analyses were compared with the data reported for other waste gas recovery projects in China, by comparing investment costs per MW, electricity tariff, etc. By in addition applying our sectoral competence, DNV was able to confirm that the input parameters used in the financial analysis are reasonable and adequately represent the economic

\(^1\) It must be noted that the validation report referred to the feasibility study report (FSR) which for this project is identical with the PDR.
situation of the project. The O & M costs were found to be slightly higher than for other similar projects. However, a detailed breakdown of the O & M costs was presented to DNV during the validation and the evidences were checked by DNV.

Issue 3: The DOE is requested to provide 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.

DNV response:
Reference is made to the timeline provided in the project participants’ response to the requests for review, and the documentation referred to by the project participants.

The project start date has been defined as 07 April 2005, corresponding to the signature of the construction contract for the CSG component. Subsequently, negotiations between the project developer and EcoSecurities started in July 2005, and in October of the same year, the Emission Reduction Purchase Agreement was signed. At this time, ACM0004 version 01 had recently been approved. However, it was not clear how exactly the methodology would apply to the technology used in the project activity (since at this stage, waste pressure technology was also included). EcoSecurities thus approached DNV and DNV submitted a clarification request on the same issue on 23 December 2005. Hence, although the PDD was only presented for validation in July 2006, DNV started pre-validation activities for the project already in December 2005.

Clarification was given in February 2006, and the methodology was subsequently revised in March 2006. In the subsequent month, April 2006, the FSR of the largest of the components of the project, the CCPP, was approved. After the approval of this crucial part of the project, the project participants proceeded with PDD development. Hence, it was possible for DNV and EcoSecurities to sign a contract on the validation of the project on 27 July 2006, and the PDD was published for stakeholder comments on the same day.

DNV has verified the project starting date, the ERP A signature, and the PDR approval for the CCPP and CSG during the validation of the project, and is also able to confirm the date of the validation contract. The timeline of the methodology approval, clarification request and methodology revision are all available on the UNFCCC website.

Issue 4: Further clarification is required on how the DOE has validated the baseline determination, in particular that the continuation of grid electricity import is more economically attractive alternative than the project activity undertaken without the CDM.

DNV response:
Since one of the alternatives to the project activity is continued import of electricity from the grid, the project developer’s decision is 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:

“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.”
The project reduces the plant’s import of electricity, and the IRR analysis presented in the PDD considers the investments for implementing the project technology and considers as revenue the savings due to having to import less electricity than in absence of the project activity. The IRR analysis presented in the PDD thus considers the incremental investment and the incremental revenue of the project compared to the assumed baseline scenario. As shown in our validation report, the project IRR without CDM revenue is 9.43%, which is lower than the benchmark rate of 13%. This shows that the project is financially less attractive than the import of electricity from the grid, and thus importing electricity from the grid should be considered as the baseline scenario.

In addition, the project participants have provided an NPV analysis that compares the NPV of continuing to import electricity from the grid with the NPV of the project, applying the same assumptions used in the IRR analysis presented in the PDD. This NPV comparison confirms that the NPV of the project is significantly lower, demonstrating that the continuation of grid electricity import is a more economically attractive alternative than the project activity undertaken without the CDM.

We sincerely hope that the Board accepts our aforementioned explanations.

Yours faithfully

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