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Att: CDM Executive Board

Your ref.:
CDM Ref 1744

Our ref.:
GuoKang/BRINKS

Date:
11 November 2008

Response to request for review: “Yiyang Xiushan Hydropower Project, P.R. China” (1744)

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 1744 “Yiyang Xiushan Hydropower Project, P.R. China” and would like to provide the below initial response to the issues raised in the requests.

Question 1: Further clarification is required on how the DOE has validated the suitability of: a) the input values to the investment analysis as per the guidance of EB 38 paragraph 54, and b) the fixed input values to the investment analysis.

DNV Response:

a) Suitability of the input values to the investment analysis as per the guidance EB38 paragraph 54.

Step 1: Assess the sources of the input parameters

All input parameters for the project IRR calculation are taken from the preliminary design report (PDR) of the project. The PDR, dated August 2004, was developed by an accredited third party (Hunan Province Design & Research Institute of Water Resources and Hydropower) and approved by development and reforming committee (DRC) of Hunan province on 15 September 2004. Therefore, all input parameters used in the IRR calculation can be considered as information provided by an independent and recognized sources.

Step 2: Confirm that the values used in the PDD are fully consistent with the PDR

DNV has cross-checked the IRR calculation input values with the parameters stated in the preliminary design report. DNV was able to confirm that the values applied are consistent with the value stated in the PDR.

Step 3: Assess the period of time between the approval of adjusted preliminary design report and the investment decision

The adjusted PDR was approved on 15 September 2004, thus 11 month prior to the decision to proceed with the project activity (i.e. the construction starting permission date) which was on 18 August 2005. Given the short time period between approval of the PDR and the decision to proceed with the project activity, it is unlikely that the input values would have materially changed.

DNV considers 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 analysis were compared with the data reported for other similar proposed hydropower CDM projects connected to the Central China Power Grid, e.g. investment costs per kWh, O&M costs per MW, electricity tariff and percentage of O&M costs relative to total investment costs. While we acknowledge that the information from these projects is also based on feasibility study reports (FSR) or PDRs, it must be noted that these FSRs and PDRs were developed by several different independent institutes. In addition, based on our sectoral expertise, the input parameters used in the financial analysis are in DNV's opinion reasonable.

b) the fixed input values to the investment analysis.

According to "Economic evaluation code for small hydropower projects (SL 16-95)" published by the Ministry of Water Resources, financial analysis in FSRs and PDRs in China shall be calculated with a fixed tariff. DNV was able to confirm that this is in line with the common practice in China.

In addition, DNV understanding is that FSR and PDR in China are the basis for project developer investment decision. Moreover, applied benchmark related to IRR analysis with fixed input value, and an IRR without escalation of the electricity tariff and O&M costs is thus in our opinion more suitable to be compared against the selected benchmark.

Fixed value: Electricity tariff:

The electricity tariff is under strict control from the central government in China, and will not be significantly changed without permission from the central government. In order to ensure price stability across China, the central government controls basic prices such as electricity tariffs and commodity prices.

On 10 February 2002, the "Reform scheme of power regulatory framework" was issued by the State Council*. The reform aimed at separating the power plant from the grid and requires bidding on the electricity sale price, which had for consequence to increase competition and thus lower feed-in tariffs.

DNV has verified evidences letter issued by local government (price bureau of Taojiang county) dated 20 December 2007, that confirms that the electricity tariff had followed price guidance and had not changed since June 2003. DNV considers reasonable to use fixed tariff as the project developer could not predict with certainty how the tariff would vary at the time of the decision to proceed with the project.

Fixed value: Investment cost

The investment cost was audited in December 2007 to be 719 435 649 RMB by Yiyang Fangyuan Certified Public Accountants Co., Ltd. (Project investment Inspection Report^{*}). So the actual investment cost is higher than the estimated in the PDR which was 627 411 300 RMB mainly due to inflation in China. Therefore, it is conservative to use fixed investment cost value in the financial analysis.

Fixed value: Operating and Maintenance cost

Operating costs are increasing in recent year due to inflation in China. This was verified by DNV based on data taken from the statistical yearbook 2007 published by the Chinese government which shows the rate of inflation in China for various commodities and services (<http://www.stats.gov.cn/tjsj/ndsj>). From year 2000 to 2006, the average annual increasing rate is 10.04% for labour costs, and 4.73% for materials, fuel and other costs. This shows that assuming fixed operating costs in the investment analysis was conservative. If escalating tariffs are used, then escalating operating and maintenance costs have to be used too.

* Project Investment Inspection Report by Yiyang Fangyuan Certified Public Accountants Co., Ltd. in 12 December 2007.

As a conclusion, it is difficult for the project developer to predict future trends of the electricity tariff at the time of the investment decision. Variations to the operating costs have no substantial impact on the IRR of the project. Since “Economic Evaluation Code for Small Hydropower Project (SL16-95)” stipulates that input values should be fixed, it was reasonable for the proposed project to consider a fixed electricity tariff in the financial analysis. Moreover, also the applied benchmark is related to IRR analysis with fixed input values, and an IRR without escalation of the tariff and operating costs is thus suitable to be compared against the selected benchmark.

Question 2: The DOE should clarify the changes made between the PDD published for global stakeholder consultation and the PDD submitted for registration, in particular the change of the starting date of project activity (from 31 October 2004 for the construction start date to 18 August 2005 for the construction approval) and its possible impact on the additionality of the project.

DNV Response:

The PDD **Error! Reference source not found.** was made publicly available on DNV’s climate change website (www.dnv.com/certification/climatechange) during a 30 days period from 19 September 2006 to 18 October 2006.

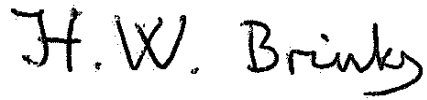
The revised PDD version 03.1 dated 8 March 2008 was the version submitted for registration. The major differences in comparison to version 01 of the PDD are following:

1. Installed capacity was changed from 64 MW to 65 MW. DNV was able to verify that the installed capacity conforms with PDR approval by the local government.
2. Operating hours was changed from 4 221 to 4 235 hours. DNV was able to verify that it is in line with the data in the approved PDR.
3. Power density was changed from 14.2 to 10.3 W/m². DNV was able to verify that this is in line with the data in the PDR. This change has no impact on the additionality.
4. The data source for the IRR input was changed from FSR to PDR. In China, the FSR and PDR are serving the same function, either of them can be used for project approval. In this project, the data from the PDR are assumed more appropriate than the FSR as it was issued and approved after the FSR. As we mentioned in the validation report, all data in the PDR are validated and considered to be accurate and reasonable.
5. Emission factor was changed from 0.93695 to 0.9436 tCO₂/MWh due to data updated to latest public available data in China. This change has no impact on the additionality.
6. Starting date of project activity was changed from 31 October 2004 to 18 August 2005. The 31 October 2004 was incorrectly mentioned as the project starting date in the PDD version 01 submitted for global stakeholder comments. DNV has verified the following evidences:
 - The project construction start permission issued by Hunan Yuhui hydropower construction supervision company dated 18 August 2005.
 - The construction contract with Guangdong hydropower 2nd construction Co., Ltd. dated 10 September 2005.
 - The power generator purchasing contract with Tianjin Tianfa heavy machinery plant dated 10 September 2005.

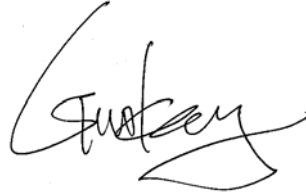
By checking the above documents, DNV was able to verify that the earliest project starting date was 18 August 2005. DNV is able to confirm that the project participants were getting to know CDM through the approval of PDR which was issued by Hunan DRC at 15 September 2004. The change of starting date thus has no impact on the additionality.

We sincerely hope that the Board find our elaboration on the above satisfactory

Yours faithfully
for DET NORSKE VERITAS CERTIFICATION AS



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