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Att: CDM Executive Board

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Your ref.:	Our ref.:	Date:
CDM Ref: 2216	JDMA/WENBO/BRINKS	23 February 2009

Response to requests for review of the project "Guohua Tongliao Kezuo Zhongqi Phase I 49.5 MW WindFarm Project" (CDM Reference No. 2216)

Dear Members of the CDM Executive Board,
We refer to the issue raised by the requests for review by three Board members regarding project activity "Guohua Tongliao Kezuo Zhongqi Phase I 49.5 MW Wind Farm Project" (UNFCCC reference number 2216) and would like to provide following initial responses to the issue raised.

Question: The DOE is requested to confirm the suitability and credibility of all input values derived from the FSR, as the response to CL7 indicates that certain values in this report were assumed in order to create an IRR of 8%. On this basis the DOE should assess which other critical parameters in the FSR are based on assumptions and which are based on credible and reliable sources relevant to this project.

DNV Response:
CL7 is requesting the financial analysis spreadsheet and evidence for the electricity tariff. Except for the electricity tariff, for which a more accurate input parameter source is used, all input parameters in the financial analysis are taken from the Feasibility Study Report (FSR) developed by Beijing Guodian Water Resources & Electric Power Engineering Co. Ltd., which is an accredited third party by Ministry of Construction of China. The FSR was approved by Development and Reform Commission of Inner Mongolia Autonomous Region on 9 November 2006. The input parameters used in the financial analysis can thus be considered information provided by an independent and recognised source.
The electricity tariff of 0.4722 RMB/kWh (excluding VAT) is based on the approval letter of Development and Reform Commission of Inner Mongolia Autonomous Region dated 9 November 2006.

FSR approval procedure:

a) The FSR of the proposed project compiled and completed in August 2006 by Beijing Guodian Water Resources & Electric Power Engineering Co. Ltd. which is accredited as grade A designer by Ministry of Construction of China in 2002. And the FSR approved by Development and Reform Commission of Inner Mongolia Autonomous Region issued on 9 November 2006.

b) Before the approval of FSR by the government, the report was reviewed by sector experts designated by the government on 28 September 2006, which can be confirmed from document "the evaluation and examination opinion of Guohua Tongliao Kezuo Zhongqi Phase I 49.5 MW Wind Farm Project by sector expert evaluation and examination session" in annex 9 of FSR.
DNV verified the above documents during the validation process.

Financial analyses are generally budgeted cash flow based on experience with similar projects. Except for the tariff, the parameters in these financial analyses are assumptions/estimates at the time of the decision. The exact investment cost is not known before the construction is finalized. The real operating and maintenance will be revealed after years of operation. The electricity generation data are all estimates based on models and long-term wind data, which will be tested after the project is realized. However, similar projects have been carried out in the past. This experience is used by companies that are accredited to prepare FSRs to make financial analysis to estimate the financial return of the investments.
DNV does not consider it correct during a validation to re-do the FSR, but to check the reasonableness of the assumptions made in the FSR against other projects initiated lately in the same region in accordance with EB38 paragraph 54c.
This cross-checking is based on other projects that have been under validation, but also other data are used. e.g. as mentioned in the bulletin of State Electricity Regulatory Commission on 27 September 2007, the average investment cost per capita of the wind power projects is approximate 9 266 RMB/kW. The investment per kilowatt of the wind power project with the unit capacity of 1.5 MW is 9 791 RMB/kW. For the proposed project with the unit capacity 1.5 MW, the investment per kilowatt is 8 997 RMB/kW, which is lower than the statistic data.
Comparing with registered CDM projects with same capacity (49.5MW) and in the same region (Inner Mongolia) with the proposed project, the average investment cost per capita of the wind power projects is from 9 163 RMB/kW to 11 719 RMB/kW. The proposed project has an investment cost per capita lower than this range. DNV thus considered the investment cost to be conservative and credible.

The O&M cost includes the maintenance costs, salary and welfare, material cost and other costs. It is common practice in China that the O&M cost is based on statistic data in the same industry and actual environment and conditions of the individual project.
According to "Study on the Pricing Policy of Wind Power in China"[1] published in October 2006, the annual maintenance cost /investment is usually 1.5% in the first ten years and 2% in the other years. The proposed project chose the low range of 1.5% during the whole operational lifetime, and DNV considered the selected figure conservative for IRR calculation.
Furthermore, in another document named "Renewable Energy-Technology, Economics and Environment"[2] published on 10 September 2007, it is mentioned that the O&M costs are usually from 5%-8%. The annual O&M cost of the proposed project is accounted for 3% of total static investment, which is lower than the normal range. The O&M cost is therefore considered to be reasonable and credible.
DNV verified the above documents and could confirm that these documents are credible information published by the third parties for wind farm projects.

[1] Table 20, Page 52 of *Study on the Pricing Policy of Wind Power in China,* issued by Chinese Renewable Energy Industries Association and Green Peace in October 2006
[2] Renewable Energy-Technology, Economics and Environment, page 342,2007

The determination of annual power generation in FSR is based on "Methodology for Compilation of Feasibility Study Report on Wind Farm Project" issued by NDRC in May 2005.
In chapter 2 item 3, the FSR designer should collect some historical data for at least 30 years including wind speed, wind direction and other relevant data of the weather station, together with the one year wind continuous measurement data of the proposed project site.
In chapter 3 item 7, it is mentioned that the wind data of the proposed project site is rectified as per relevant regulations and collected historical wind data. Also, in this item, the wind resource and generation output assessment is required to be carried out based on Wind Resource Measurement and Assessment Regulation issues by NDRC (Fagainengyuan [2003]1403) and two technology standards GB 18710-2002 named the assessment method of wind resource in wind farm and GB18451.1-2001 named the safety requirement for wind generator.

For the FSR of this proposed project, it is conformity with this document.

- The FSR mentions that the annual electricity output firstly is based on the wind data of the project site which is measured for the whole year from August 2005 to August 2006.
- The FSR mentions that above data was checked and rectified by the average data of several years (1971-2005) from weather station nearby the proposed project, which was obtained to determine the richest wind source area and to optimize the location of each turbine in order to maximize power generation.
- The FSR mentions that the wind turbine location distribution is optimized based on assessment of the wind resource of the project site and the installed capacity and sets of wind turbine.
- The FSR mentions that some factors impacted on wind power generation, such as air density, trailing stream, wind turbine efficiency on the annual theoretical power generation, power curve, leaf pollution, on-flow and control, weather impact. These factors were considered and estimated annual power generation was obtained.

For the FSR of this project, the average annual power output is determined to be 108 830 MWh.

DNV acknowledge that the FSR of this project is conformity with the relevant regulations and was able to confirm other key parameters from FSR are based on the reliable and credible sources.

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

Yours faithfully
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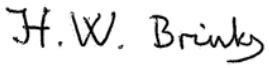

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