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Att: CDM Executive Board

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Response to requests for review “Inner Mongolia Bayannaer Chuanjingsumu Wind Power Project” (2099)

Dear Members of the CDM Executive Board,

We refer to the issues raised in the requests for review by three Board members regarding our request for registration of project activity 2099 “Inner Mongolia Bayannaer Chuanjingsumu Wind Power Project” and would like to provide our initial response to the issues raised.

Comment 1: *The PP should further explain and the DOE should clarify how the investment analysis was validated as credible and appropriate, thereby also taking into account that all data for the IRR calculations were sourced from the FSR, with only one exception, in particular:*

- a) *the basis for the assumed tariff in the FSR (April 11, 2007), being FSR 0.5528 RMB/kWh incl. VAT and resulting in an IRR of 8.46%;*
- b) *this tariff assumption is conflicting with the calculations in the propositional letter from the local DRC (February 27, 2007), which indicates an electricity tariff for the project of 0.54 RMB/kWh incl. VAT, making the project financially unattractive and forcing the project developer to apply for CDM.*
- c) *the basis for the assumed tariff in the FSR and whether the change in tariff is not considered to be an E+ policy, according to EB 22, Annex 3, para.6.*
- d) *Furthermore the DOE is requested to clarify how replication of the calculations in the spreadsheet provided indicates that applying the tariff used in the FSR yields a different IRR from what was obtained in the same document.*

DNV Response:

a) The calculation of the tariff in the FSR¹ (0.5528RMB/kWh incl.VAT) is based on local economic development and project assessment criterion such as *Method of Compiling Pre-Feasibility Study Report for Wind Power Projects* issued by National Development and Reform Committee (NDRC) and according to national or local wind power market conditions. However, the electricity tariff in China for renewable energy such as wind power is regulated according to the *Notice on tariff determination method*² by the governmental tariff bureau. The regulation does according to market principles cover costs and ensure a certain level of profit. Therefore, the final (actual) tariff of a project is defined *ex-post* when considering the circumstances of local and central government policies, the economic situation and consumption status.

The timeline for the selection of the electricity tariff can be described as follows:

- September 2006: the FSR dated September 2006 was developed by third party entity Xinjiang Wind Design Institute which is accredited directly by National Construction Ministry. The FSR indicate a tariff of 0.5528 RMB/kWh (incl. VAT).
- February 2007: Letter from the local DRC, dated 27 February 2007, proposes a reduced electricity of 0.54 RMB/kWh (incl. VAT).
- April 2007: The FSR approval letter dated 11 April 2007 for Inner Mongolia Bayannaouer Chuanjingsumu Wind Power Project was issued by the local government.

Based on the tariff for the proposed project sourced from the “Propositional letter for tariff” issued by the local DRC on 27 February 2007³ (which is prior to the start of the project activity of 8 June 2007), the project IRR was calculated to be 7.67%, and thus below the selected project IRR benchmark of 8%. Both the FSR and the letter from the local DRC were made available by the project proponent and verified by DNV.

b) The tariff assumed in FSR is a price estimate from the FSR designer based on the local economic development, national regulations and the specific circumstances of the proposed project. However, the electricity tariff in China for renewable energies such as wind power is regulated according to the “notice on tariff determination method” (NDRC2005, No.514), by the government tariff bureau, the regulation is in respect of market principle covering the cost and ensuring a certain level of profit. Therefore, the final/actual tariff of a project is defined *ex-post* when considering the circumstance of local and central government policy, economic situation and consumption status. The project participants have to adopt to the tariff they achieve and decide to go ahead with the project or not.

The IRR calculations were provided in a spreadsheet. The calculations were verified and found to be correct and in accordance with the EB’s latest guidance on the assessment of investment analyses (EB41). The assumptions used in the calculations were deemed to be correct by DNV. The project-IRR without CDM revenues is 7.67%, which confirms that the project in the absence of CDM benefits and compared to the benchmark of 8% is not financially attractive. With CER revenues the project IRR increases to 10.95%, which is above the benchmark

c) The basis for tariff in the FSR is clarified in a) above.

According to EB 22, Annex 3, para. 6:

¹ FSR developed by Xinjiang Wind Power Design Graduate School in September 2006 and approved by the Development and Reform Commission of Inner Mongolia Autonomous Region on 11 April 2007.

² NDRC2005, No.514

³ The propositional letter on the expected tariff of the proposed project from local Development and Reform Bureau on 27 February 2007.

‘National and/or sectoral policies or regulations that give comparative advantages to more emissions-intensive technologies or fuels over less emissions-intensive technologies or fuels’.

Therefore, the type E+ policy would result in increased GHG emissions.

The change of the assumed tariff in the FSR (0.5528 RMB/kWh) into a realistic tariff of 0.54 RMB/kWh does not contradict the Chinese policy in favour of renewable energy industry. DNV has verified the tariff of thermal power plants as 0.2659 RMB/kWh (incl. VAT)⁴ in Inner Mongolia Autonomous Region; and ascertained that the tariff of renewable energies are composed of two parts: 1) levelised price of thermal power; and 2) the subsidy above levelised 0.2659 RMB/kWh from the central government. The reduction from the assumed 0.5528 RMB/kWh to the realistic 0.54 RMB/kWh (still above the levelised tariff of thermal of 0.2659 RMB/kWh) falls into the normal subsidy range. The conclusion is that those subsidies, still reduced in magnitude, still pertain to the renewable energies such as wind projects to be supported by national and/or sectoral policies or regulations. E+ policy is therefore not considered relevant in this context.

d) Taking the tariff of 0.5528RMB/kWh as input in the calculations in the spreadsheet provided, the IRR is 7.67%. The 8.46% as indicated in the FSR dated September 2006 appears to be calculated in a different way. The difference is due to the exclusion of loan repayment and loan interest in the spreadsheet as required for project IRR calculations according to EB41 Annex 45 para 9.

Comment 2: *The DOE should further clarify how the sensitivity analysis was properly validated, taking into account: a) the low variations required for the project's IRR to reach the benchmark of 8%; and b) that the turbines investment cost was actually verified to have decreased.*

DNV Response:

a) The sensitivity analysis was submitted in a spreadsheet open for editing and with visible calculations. DNV was able to check and confirm that the calculations were performed in an appropriate manner. The input parameters were assessed as follows:

1) When decreasing the total investment by 2.28%, the project IRR would exceed the benchmark of 8%. According to the *Analysis for Current Price Increasing and Expectation for 2008*, drafted by the State Council Development Research Center on 28 March 2008, the costs of equipment and construction have been increasing in the recent years due to the strong development in the wind power sector. The total investment costs consist of equipment, installation and construction costs, and even though the actual equipment costs were 0.6% lower than estimated, the total costs are unlikely to increase by 2.28%.

2) If the electricity tariff would increase by 2.20%, the project IRR would exceed the benchmark. However, according to *China's Management Rules on Tariff* issued by NDRC⁵, the tariff of for wind power projects not participating in tender is determined by the state government with reference to the tariff of wind projects participating in a tender locally. In line with this, a similar tariff is expected to be enjoyed by the wind power projects not participating a tender within the same grid, to reflect the principle of fair competition in the market.

The proposed project as a project not participating in a tender, as according to the guidance above, cannot use a tariff higher than 0.54 Yuan/ kWh (including VAT) as stated by the local Development and Reform Commission propositional letter. This is backed up by other evidences showing that a decreasing trend can be expected, as it was seen in a press

⁴ Notice on Tariff adjustment issued by NDRC in 2006

⁵ NDRC Price[2006]7

conference held by the State Council Information Office on 4 September 2007⁶ were it was said that China would be taking measures to reduce in-grid tariff of wind power projects, through employing domestic wind turbines and using the scheme of tendering for wind power projects.

The actual tariff for the project was also confirmed by checking the tariff approval issued by NDRC on 3 December 2007. The actual tariff for the project is only 0.51 RMB/kWh (incl. VAT).

It is thus DNV's opinion that it is unlikely that the project's tariff will increase in the future.

3) The annual electricity output is determined by the plant load factor (PLF) and is a key parameter impacting the financial attractiveness of the project. If the annual electricity output increases by 2.20%, the project IRR may cross the benchmark.

However, the annual electricity output depends on the wind speed of the project site and specifications of the wind turbines. As per the feasibility study report, the annual electricity output is estimated based on data from April 2005 to March 2006 and compared and found consistent with the 20 years meteorological data from 1986 to 2005 in the nearest Wulat Zhongqi Weather Station (according to *Method of Compiling Pre-Feasibility Study Report for Wind Power Projects*), which was obtained through the professional software WAsP to determine the richest wind source area, then using another software WindFarmer to optimize the location of each turbine in order to maximize power generation. The PLF value is correlating positive with the wind speed, but the annual average wind speed of the project site tends to decrease and gradually stabilize over the past 30 years from 1976 to 2005 in the nearest Wulat Zhongqi Weather Station for which data are available recently.

Therefore, it is DNV's opinion that is not likely that the load factor increases by 2.20%.

b) By checking the contract, DNV was able to verify that the price of the turbines is 269.35 million RMB against the FSR estimates of 271.15 million RMB, a decrease of 0.6%. However, as clarified in 3) above, the total investment is not only including the equipment cost but also the installation cost and construction cost. Since the cost of manpower cost and materials included in construction cost and installation cost is increasing from 2006 to 2007 (*Analysis for Current Price Increasing and Expectation for 2008*) it is unlikely that the total investment decreases by 2.28%.

We sincerely hope that the Board accepts our aforementioned explanations.

Yours faithfully
for DET NORSKE VERITAS CERTIFICATION AS



Michael Lehmann
Technical Director
Climate Change Services

⁶ Press conference ny Chen Deming, NDRC (reported by Financial Daily on 5 September 2007)