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Att: CDM Executive Board

Your ref.:
CDM Ref 2100

Our ref.:
WN/RAFI/MLEH

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Response to requests for review of “Huadian Kulun 201MW Wind Farm Project” (2100)

Dear Members of the CDM Executive Board,

We refer to the issues raised by the requests for review by three Board members regarding the project activity 2100 “Huadian Kulun 201MW Wind Farm Project” and would like to provide the following initial responses to the issue raised.

Question1: *The DOE is requested to confirm the appropriateness of the electricity tariff assumed in the FSR/PDD, in comparison with previous tariff notifications since 2002 in the same region and whether such information was available at the time the FSR was prepared.*

DNV Response:

DNV confirms that the tariff of 0.47 RMB/KWh (Including VAT) for Huadian Kulun 201MW Wind Farm Project is from the FSR that was developed by Inner Mongolia Power Exploration & Design Institute in August 2007 and approved by the National Development and Reform Commission on 14 December 2007. These evidences have been provided to DNV during the validation phase.

Huadian Kulun Wind Farm Project is a large wind project with a capacity of 201 MW located in the Inner Mongolia Autonomous Region. Before the FSR was developed, Inner Mongolia Power Exploration & Design Institute consulted the Trade Center of Inner Mongolia Electric Power Co., Ltd. (Grid Company) and the local DRC to find out the appropriate tariff that should be used. The Trade Center of Inner Mongolia Electric Power Co., Ltd. suggested the tariff will likely be to the same as the tariffs applicable to other similar wind projects in Inner Mongolia Autonomous Region since 2002. From 2002 to 2007, there was only one Wind Power Project developed (i.e. Inner Mongolia Baotou Bayin Wind Power Project, UNFCCC Ref# 2135) with a capacity of 201 MW in the Inner Mongolia Autonomous Region. The approved tariff for the Inner Mongolia Baotou Bayin Wind Power Project was 0.4656 RMB/KWh (Including VAT)¹. Therefore, the Trade Center of Inner Mongolia Electric Power Co., Ltd. replied that the tariff of Huadian Kulun 201MW Wind Farm Project would not be more than 0.47 RMB/KWh (Including VAT) and suggested the tariff of 0.47 RMB/KWh (Including VAT). A letter was issued by the Trade Center of Inner Mongolia Electric Power Co., Ltd on 15 October 2007 suggesting this tariff. This letter

¹ <http://www.nwtc.cn/Article/ShowArticle.asp?ArticleID=991>

was given to the Inner Mongolia Power Exploration & Design Institute and the project owner before the Board meeting of 17 October 2007 and was also provided to DNV during the validation.

Comparing the tariff with similar scale wind projects in the same region since 2002, DNV was able to confirm that the tariff of 0.47 RMB/KWh (Including VAT) considered in the FSR/PDD was reasonable and appropriate.

Question 2: The DOE is requested to explain the differences in the input values between this project activity and a similar CDM project (PA 2153) of the same capacity that it has validated, in particular, the assumed O&M cost and residual value at the end of the operational lifetime of the project.

DNV Response:

The input values used in Huadian Kulun 201MW Wind Farm Project are taken from the Feasibility Study Report (FSR) developed by the Inner Mongolia Power Exploration & Design Institute in August 2007 and approved by the National Development and Reform Committee on 14 December 2007. DNV compared all the input values for the financial analysis included in the PDD with the parameters stated in the FSR and was able to confirm that all the values applied are consistent with the value stated in the FSR.

The input parameters used in the financial analysis were also compared with the data reported for other similar proposed CDM projects with the same capacity (201MW) and generation technology in Inner Mongolia Autonomous Region.

Below table shows a comparison of the input values of the proposed project activity with the CDM project activity 2153 “Inner Mongolia Baotou Bayin Wind Power Project” which is of the same capacity.

Project Name	UNFCCC Ref#	Installed capacity	Main Differences				
			Static investment	Tariff	Average O&M cost per year	Residual value	Income tax
		(MW)	(10 ⁴ RMB)	(RMB/KWh (Including VAT))	(10 ⁴ RMB)	(%)	(%)
Inner Mongolia Baotou Bayin Wind Power Project	2153	201	159,088	0.4656	4202.4	10	15
Huadian Kulun 201MW Wind Farm Project	2100	201	178,661	0.47	5210	5	25

1. Static investment

The static investment of Huadian Kulun 201MW Wind Farm Project is $178,661 \times 10^4$ RMB, corresponding to an investment per kW of 8888 RMB/kW. The key equipment investment is $140,257 \times 10^4$ RMB which is more than 78% of static investment. DNV checked the 12 key equipment contracts including turbines, pylons and transformers. The real contracts are in line with the budget in the FSR and the PDD.

The static investment of the Inner Mongolia Baotou Bayin Wind Power Project is $159,088 \times 10^4$ RMB, which corresponds to an investment per kW capacity of 7915 RMB/kW.

Although the static investment per kW of Huadian Kulun 201MW Wind Farm Project is 8888 RMB/kW which is higher than 7915 RMB/kW, it is still lower than the average 9414.889RMB/kWh² in Inner Mongolia Autonomous Region. Therefore DNV was able to confirm that the static investment of the Huadian Kulun 201MW Wind Farm Project was reasonable.

2. Tariff

Tariff has been discussed in detail under question#1. Comparing the tariff with similar scale wind projects in the same region since 2002, DNV was able to confirm that the tariff of 0.47 RMB/KWh (Including VAT) was reasonable and appropriate.

3. O&M cost

<i>Project Name</i>	<i>The average annual O&M cost</i>	<i>O&M cost per kWh</i>	<i>Percentage of the average annual O&M cost compared to the static investment rate</i>
	<i>10⁴RMB</i>	<i>RMB/kWh</i>	<i>%</i>
Inner Mongolia Baotou Bayin Wind Power Project	4202.4	0.09	2.64
Huadian Kulun 201MW Wind Farm Project	5120	0.103	2.87

Although the average annual O&M cost are different for the two projects, the percentage of the average annual O&M cost compared to the static investment rate are almost the same between Huadian Kulun 201MW Wind Farm Project (2.87%) and Inner Mongolia Baotou Bayin Wind Power Project (2.64%).

The O&M cost per kWh of the Huadian Kulun 201MW Wind Farm Project is higher than the O&M costs per kWh for the Inner Mongolia Baotou Bayin Wind Power Project. However, the O&M cost of the proposed project would need to decrease by 85% in order for the project IRR to reach the benchmark as per the sensitivity analysis. Therefore, the IRR analysis is not sensitive to the O&M cost. A variation in the O&M cost will thus not impact the additionality of the Huadian Kulun 201MW Wind Farm Project. In DNV's opinion, the O&M cost was reasonable and appropriate.

4. Residue value

Based on the guidance *Adjustment of Residual Value Rate of Fixed Asset for Enterprises*³, the residue value is considered 5% of the fixed asset value for the Huadian Kulun 201MW Wind Farm Project. The chosen residue value is in line with the national regulations. The Inner Mongolia Baotou Bayin Wind Power Project chose 10% as residue value which is more conservative, while it also could have chosen a value of 5%. Therefore, it is DNV's opinion that the residue value is reasonable and appropriate.

²<http://cdm.unfccc.int/Projects/registered.html> (Based on registered wind projects in Inner Mongolia)

³ Adjustment of Residual Value Rate of Fixed Asset for Enterprises³ issued by State Administration of Taxation

5. Income tax

According to the *Enterprise Income Tax Law of the People's Republic of China*⁴, enterprise income tax shall be levied at the rate of 25%. Hence, the income tax of Huadian Kulun 201MW Wind Farm Project was selected as 25% which is in line with the national requirement. However, the Inner Mongolia Baotou Bayin Wind Power Project enjoyed tax incentives according to *The Notification on Tax Preferential Policy for Development of the West Regions*⁵. The income tax of Inner Mongolia Baotou Bayin Wind Power Project is thus 15%. Hence, it is DNV's opinion that the Income tax was reasonable and appropriate.

In conclusion, the assumed input values of Huadian Kulun 201MW Wind Farm Project were found to be reasonable and appropriate.

Question 3: The DOE is requested to explain how it has validated that the income tax calculation reflects the projection for the actual cash flow of the project activity.

DNV Response:

DNV can confirm that the income tax calculation is in line the page 51 of the *Economic Assessment Method and Parameters for Capital Construction Project* (version 3) issued by NDRC and Construction department on July 2006. The calculation method is defined clearly as the income tax calculation in cash flow should be based on the total profit before interest.

The calculation formula of income tax is:

Income Tax = Income Tax Rate × Total profit before interest

Moreover;

Total profit before interest = Electricity sales revenue-VAT and surplus tax-O&M cost-Depreciation

Where:

Electricity sales revenue = power generation×tariff

VAT and surplus tax = Electricity sales revenue × VAT and Surplus tax rate

O&M cost = assumed in the FSR

Depreciation = fixed asset value× (1-residue value rate)/depreciation years

It must be noted that this calculation method is the same as applied by the Inner Mongolia Baotou Bayin Wind Power Project.

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

Yours faithfully

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Technical Director

Climate Change Services

⁴ *Enterprise Income Tax Law of the People's Republic of China*⁴ published on 16 March 2007, chapter 1, article 4

⁵ *The Notification on Tax Preferential Policy for Development of the West Regions* issued by Ministry of Finance People's Republic of China, State Administration of Taxation and General Administration of Customs of the People's Republic of China on 30 December 2001.