To: **UNFCCC Secretariat**
Martin-Luther-King-Strasse 8
D-53153 Bonn
Germany

February 2nd 2009

Dear Members of the CDM Executive Board,

Please find below our responses to the issues raised by requests for review of the "Project 2099: Inner Mongolia Bayannaoer Chuanjingsumu Wind Power Project".

Issue 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.

Response:

The input values used in the investment analysis in the PDD are sourced from the FSR except the tariff, which is the propositional tariff from the local NDRC. The FSR was prepared by Xinjiang Wind Power Design & Study Institution, which is a qualified, competent, experienced, and professional wind power designer. The appropriateness of the investment analysis had been seriously validated by DOE.

a) The FSR was finalized in September 2006, and approved on April 11, 2007. It is normal and also common in China, for waiting a certain period of time for its approval from the

FSR submission (tariff be subject to separate approval). It is highlighted that the tariff in the FSR, i.e. 0.5528 RMB/kWh is not an approved or implied tariff in any official sense. Instead it is only a calculated value which is needed for the equity IRR to reach the benchmark and makes the proposed project financially attractive to the project owner, and it is the tariff that the project owner hopes to apply for and be approved by the government. Actually the tariff will be subject to separate government approval, whereas the approved tariff will not necessarily be the tariff in the FSR. It is a usual approach in China, as per the Method of Compiling Pre-Feasibility Study Report for Wind Power Projects issued by NDRC[1], to yield a needed tariff according to the benchmark requirements, on either project IRR benchmark or equity IRR benchmark. At this tariff of 0.5528 RMB/kWh including VAT, the project IRR should be 8.73%, not 8.46% (Both 8.73% and 8.46% appeared in the FSR, 8.73% listed in Financial Indicator Table[2] in FSR, 8.46% stated in the page 93 of FSR, after having a detailed check of the FSR, it is found that 8.46% should be a mistake. The detailed clarification please kindly refer to the response d) of issue 1, and the calculation spreadsheet has been provided as annex), while equity IRR 10.02% for the proposed project[3].

b) As clarified above, the tariff in the FSR was nothing more than a calculated and desired value by the project owner. When waiting for the project approval, the project owner prepared to apply for the tariff for the proposed project and informed the local DRC of the details. The local DRC is in the position to supervise the local wind power projects, which can make suggestions on the development of local wind power projects, including the application of the tariff. The local DRC, more familiar with the tariff situation for wind power projects than the project owner, was aware that the proposed project would not be able to obtain a tariff as high as the desired level in the FSR. Accordingly, it issued a propositional letter on the tariff of the proposed project on 27 February 2007, instructing the project owner to apply for a tariff no higher than 0.54RMB/kWh, a level it would deem more possible. The tariff of 0.54RMB/kWh is not a calculated value but a suggested and proposed one by local DRC, which seems normal to conflict with the tariff in the FSR. The project owner took the proposed tariff into consideration and made a recalculation, which showed that the proposed project would be financially unattractive without other remedies made. As a result, the project owner was motivated to apply for CDM support to improve the financial attractiveness, and make possible the continuation, of the proposed project.

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[1] Method of Compiling Pre-Feasibility Study Report for Wind Power Projects issued by NDRC (The document has been provided to DOE) http://www.whdpc.gov.cn/dispxxnr.asp?id=103283

[2] Financial Indicator Table in FSR

[3] As per the Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects, the equity IRR benchmark of power industry is 10%

c) The change in tariff is not considered to be an E+ policy, for the following reasons. First, the tariff of 0.54 RMB/kWh (incl. VAT), 103% higher than the benchmark thermal power tariff in Inner Mongolia grid 0.2659 RMB/kWh (incl. VAT)[4] in 2006, 96% higher than the benchmark thermal power tariff in Inner Mongolia grid 0.2749 RMB/kWh (incl. VAT)[5] in 2008. It gives a significant comparative advantage to the low-emission wind farm project over more emission intensive technologies, as it effectively grants a premium for the wind farm above the electricity tariff for thermal power plants. Second, the change in tariff is basically not a policy, as the initial tariff was nothing more than a calculated and desired value by the project owner and was not a tariff in any official sense, while the later tariff was a proposed value by local DRC, which of instructive sense but no approval sense. Actually the official tariff of approval sense is the approved tariff in the Tariff Approval for Some Projects issued on December 3, 2007, the approved tariff of the proposed project is 0.51 Yuan/kWh (incl. VAT)[6]. The fact that both the initial tariff 0.5528 RMB/kWh and the later tariff 0.54 RMB/kWh were of no approval sense means that the change itself in tariff has little official sense either, and should not be regarded as a policy. Third, the change in tariff showed in this case is only for the proposed project. It is case-specific and not applicable to other projects. Therefore, from this perspective it should not be regarded as a policy either, and the change in tariff has no E+ effect either. Forth, it is a fact that the wind power industry in China has made a dramatically progress in past few years, attributed both to the preferential tariff over the thermal power and to the CDM support. The tariff for wind power projects has a decrease compared with one at the early stage of the development of wind power, is the result of the strictly regulated by the NDRC on the decrease of the investment cost per KW for wind power projects. Furthermore, it is our understanding that, the baseline scenario of a new grid-connected renewable power plant/unit is that Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system", as clearly defined in the methodology ACM0002. In this regard, it would not influence the establishment of the baseline scenario. Given above, the change in tariff is not considered as an E+ policy.
The relevant evidences have been provided to the DOE.

d) To be conservative, investment analysis in PDD is carried out on project IRR, to compare with the benchmark requirement of 8%.

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[4] Notice on Tariff Adjustment of North China Power Grid issued by NDRC in 2006

[5] Notice on Tariff Adjustment of North China Power Grid issued by NDRC in 2008

[6] Tariff Approval for Some Projects issued by NDRC on December 3, 2007

When replicating the project IRR in the spreadsheet provided using the tariff in the FSR, i.e., 0.5528 RMB/kWh incl. VAT, the resulted IRR is 8.03%, which is different from the value in the FSR, i.e. 8.73% (8.46% is a mistake). The difference is caused by the treatment of loan interests in the calculation of project IRR.

Specifically, a comparison between the replicated project IRR cash flow table using the tariff in the FSR (Referred to as "Replicated Cash flow Table") and the project IRR cash flow table in the FSR (Referred to as "FSR Cash flow Table") shows that the difference in the project IRR is derived from the different values of three factors, i.e., Fix Assets Residual Value, Operating Cost, and Income Tax, of which the differences are caused by the treatment of loan interests. In more detail, loan interests are excluded in the Replicated Cash flow Table, but are included in the FSR Cash flow Table.

As is known to all, project IRR as a pre-financing analysis should exclude the loan interests from the calculation, as required by the Methodology and Parameters of Economic Evaluation on Construction Projects (third edition) and consistent with the Guidance on the Assessment of Investment Analysis provided by CDM EB[7]. Therefore, the Replicated Cash flow Table is done excluding the loan interests.

In summary, the exclusion of the loan interests in the Replicated Cash flow Table, against their inclusion in the FSR Cash flow Table, caused the differences in the three factors, i.e., Fix Assets Residual Value, Operating Cost, and Income tax, and in turn caused the difference in the Replicated project IRR and FSR project IRR. Below is the specification of how the treatment of loan interests impacts the three factors, and thus impacts IRR.

1) For Fix Assets Residual Value, in the Replicated Cash flow Table it is calculated as Fixed Assets Residual Value = original value of fixed assets × rate of fixed assets residual value, which involves no loan interests.

In contrast, in the FSR Cash flow Table it is calculated as (as provided in the FSR) Fixed Assets Residual Value = (original value of fixed assets + loan interest in the construction period) × rate of fixed assets residual value, which includes loan interest in the construction period.

2) For Operating Cost, in the Replicated Cash flow Table it is calculated as Operating Cost = annual salary per capita ×employee population × (1+ rate of welfarism) + original value of fixed assets× (rate of maintenance + rate of insurance premium) +

[7] As per EB 41, annex 45, para.9, the cost of financing expenditures (i.e. loan repayments and interest) should not be included in the calculation of project IRR.

(fixed amount of material cost+ fixed amount of other costs) × installed capacity, which involves no loan interests.

In contrast, in the FSR Cash flow Table it is calculated as (as provided in the FSR)
Operating Cost = annual salary per capita ×employee population × (1+ rate of welfarism) + (original value of fixed assets + loan interest in the construction period) × (rate of maintenance + rate of insurance premium) + (fixed amount of material cost+ fixed amount of other costs) × installed capacity, which includes loan interest in the construction period.

3) For Income Tax, in the Replicated Cash flow Table it is calculated as
Income Tax = (sales revenue- sales tax and extra charges - operating cost - original value of fixed assets × (1- expected rate of residual value) ÷ expected depreciable life) × rate of income tax, which involves no loan interests.

In contrast, in the FSR Cash flow Table it is calculated as (as provided in the FSR)
Income Tax = (sales revenue- sales tax and extra charges - operating cost – (original value of fixed assets + loan interest in the construction period) × (1- expected rate of residual value) ÷ expected depreciable life) – loan interest expenses) × rate of income tax,

Where:
Operating cost = annual salary per capita ×employee population × (1+ rate of welfarism) + (original value of fixed assets + loan interest in the construction period) × (rate of maintenance + rate of insurance premium) + (fixed amount of material cost+ fixed amount of other costs) × installed capacity, which involves loan interest in the construction period and loan interest expenses.

For the project, the static investment is 404.17 million RMB. The interest in the construction period is 9.11 million RMB. As calculated with the formula above, the result of the total cost table (including operating costs) and IRR cash flow table, both for the FSR and that for replication, are provided below (table 1-4)[8], and the IRR calculation spreadsheet are attached as annexes.

[8] The rate of fixed assets maintenance of the project is 1.46% for first 10 years and 2.78% for last 10 years, as stated in the FSR of page 91. Calculated on the investment of 404.17 million RMB, the maintenance costs should be 5.90 million RMB in the first 10 operation years, and 11.24 million RMB in the last 10 operation years, compared to what calculated on 413.28 million RMB, the sum of the static investment and interest, the maintenance costs are 6.03 and 11.49 million RMB respectively. The total cost table in FSR listed that there was an increase of 0.08 million RMB for the maintenance costs in the last 5 years. That doesn't comply with what stated in the FSR.

Table 1: FSR total cost table (unit: ten thousand RMB)

No	Items	Total		Operation period																		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Maintenance costs		0	603	603	603	603	603	603	603	603	603	603	1149	1149	1149	1149	1157	1157	1157	1157	1157	1157
2	Annual salaries		0	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
3	Insurance premium		0	167	167	167	167	167	167	167	167	167	167	167	167	167	167	167	167	167	167	167	167
4	Material fee		0	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49
5	Other costs		0	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197
6	O &M costs (1+2+3+4+5)		0	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1643	1643	1643	1643	1651	1651	1651	1651	1651	1651
7	Depreciation		0	2480	2480	2480	2480	2480	2480	2480	2480	2480	2480	2480	2480	2480	2480	2480					
8	Interest		0	1891	1756	1621	1487	1352	1218	1083	948	814	679	545	410	275	141	6	6	6	6	6	6
9	Total costs (6+7+8)		0	5468	5333	5199	5064	4930	4795	4660	4526	4391	4256	4667	4533	4398	4264	4137	1658	1658	1658	1658	1658
10	Income tax		0	0	0	124	144	164	405	450	494	538	583	447	492	536	581	622	1441	1441	1441	1441	1441

Table 2: Replicated total cost table when applying tariff in FSR (unit: ten thousand RMB)

No	Items	Total		Operation period																		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Maintenance costs		0	590	590	590	590	590	590	590	590	590	590	1124	1124	1124	1124	1124	1124	1124	1124	1124	1124
2	Annual salaries		0	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
3	Insurance premium		0	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164	164
4	Material fee		0	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49
5	Other costs		0	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197
6	O &M costs (1+2+3+4+5)		0	1081	1081	1081	1081	1081	1081	1081	1081	1081	1081	1614	1614	1614	1614	1614	1614	1614	1614	1614	1614
7	Depreciation		0	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425	2425					
8	Interest		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
9	Total costs (6+7+8)		0	3506	3506	3506	3506	3506	3506	3506	3506	3506	3506	4039	4039	4039	4039	4039	1614	1614	1614	1614	1614
10	Income tax		0	0	0	378	378	378	831	831	831	831	831	655	655	655	655	655	1455	1455	1455	1455	1455

Table 3: FSR Cash flow Table (unit: ten thousand RMB)

No	Items	Total		Operation period																		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Cash inflow	125666	0	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	10352
1.1	Sales revenue	121383	0	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069
1.2	Fixed assets residual value	4133																					4133
1.3	Recovered liquid capital	150																					150
2	Cash outflow	83111	40417	1294	1144	1303	1329	1355	1590	1639	1688	1737	1786	2182	2231	2280	2329	2383	3285	3285	3285	3285	3285
2.1	Static total investment	40417	40417																				0
2.2	Liquid capital	150		150																			0
2.3	O & M costs	27458	0	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1643	1643	1643	1643	1651	1651	1651	1651	1651	1651
2.4	Sales tax & extra charges	929	0	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
2.5	Income tax	12782	0	0	0	124	144	164	405	450	494	538	583	447	492	536	581	622	1441	1441	1441	1441	1441
2.6	Staff bonus and welfare	1376	0	0	0	35	41	46	41	46	50	55	59	45	50	54	59	63	146	146	146	146	146
3	Net cash flow	42555	-40417	4775	4925	4766	4741	4715	4479	4430	4381	4332	4283	3887	3838	3789	3740	3686	2785	2785	2785	2785	2785
	IRR	**8.73%**																					

Table 4: Replicated Cash flow Table (unit: ten thousand RMB)

No	Items	Total		Operation period																		
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Cash inflow	125575	0	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	10261
1.1	Sales revenue	121383	0	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069	6069
1.2	Fixed assets residual value	4042																					4042
1.3	Recovered liquid capital	150																					150
2	Cash outflow	86341	40417	1403	1253	1612	1612	1612	2042	2042	2042	2042	2042	2382	2382	2382	2382	2382	3263	3263	3263	3263	3263
2.1	Static total investment	40417	40417																				0
2.2	Liquid capital	150		150																			0
2.3	O & M costs	26948	0	1081	1081	1081	1081	1081	1081	1081	1081	1081	1081	1614	1614	1614	1614	1614	1614	1614	1614	1614	1614
2.4	Sales tax & extra charges	929	0	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
2.5	Income tax	15833	0	0	0	378	378	378	831	831	831	831	831	655	655	655	655	655	1455	1455	1455	1455	1455
2.6	Staff bonus and welfare	2065	0	126	126	107	107	107	84	84	84	84	84	66	66	66	66	66	148	148	148	148	148
3	Net cash flow	39234	-40417	4666	4816	4458	4458	4458	4027	4027	4027	4027	4027	3688	3688	3688	3688	3688	2806	2806	2806	2806	6998
	IRR	**8.03%**																					

Issue 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.

Response:

a) To be conservative, investment analysis in PDD is carried out on project IRR, to compare with the benchmark requirement of 8%, and four factors have been considered in sensitivity analysis, i.e. static total investment, annual O & M costs, tariff, and operating hours. Though the low variations required for the project IRR to reach the benchmark of 8%, it is highly conservative, and much robust, as clarified in the following:

1) Tariff

The sensitivity analysis in the PDD is carried out with the propositional tariff, and shows that the tariff should have an increase of 2.20% to reach the benchmark of 8%. It is a known fact that the tariff of wind power projects in China implements two-phase tariff, namely that the tariff within 30000-hour operation (first phase) and after 30000-hour operation (second phase). The tariff of 0.54 RMB/kWh incl. VAT is only for the first phase, the tariff at second phase should be the average tariff in Inner Mongolia grid. Since Inner Mongolia power grid is dominated by the thermal power plants, which the thermal power generation accounts for more than 98% of the total power generation[9], the average tariff in the grid should also be dominated by the thermal power tariff. The benchmark thermal power tariff in Inner Mongolia is only 0.2749 Yuan/kWh (including VAT)[10]. Therefore, the adoption of the propositional tariff in the whole operation period is highly conservative, as done in the sensitivity analysis in the PDD. The sensitivity analysis have been carried out with the two-phase tariff (at 0.54 RMB/kWh for first phase and 0.2749 RMB/kWh for second phase), since the first phase tariff is fixed, the variation requirement for the tariff at second phase should have an increase of 119%, which is very unlikely (calculation spreadsheet attached). The impossibility of the increase of the tariff for the project has been confirmed by, the tariff approval issued by NDRC on 3 December 2007, the actual tariff for the project is only 0.51 RMB/kWh incl. VAT for the first phase and the average tariff in the Inner Mongolia grid for the second phase, and also, by the PPA signed in March 2008, the tariff is 0.51 RMB/kWh incl.VAT for the first phase and 0.2749 RMB/kWh incl. VAT for the second phase, that makes the project's IRR worse.

2) Static total investment:

Table 5 shows the investment breakdown and it is very unlikely for the total investment to have a decrease to reach the benchmark of 8%.

[9] China Electric Power Yearbook 2007

[10] Notice on adjustment of the tariff in NCPG issued by NDRC in 2008

Table 5: The investment cost and the clarification (unit: million RMB)

	FSR	Clarification
Total investment	404.17	The static total investment should have a decrease of 2.28% to reach the benchmark of 8%. As clarified below, a reduction of 2.28% is not realistic. Otherwise, the requirement of 2.28% is figured out on the basis of adoption the propositional tariff in the whole operation period, in a conservative manner. Would the sensitivity analysis be carried out with the two-phase tariff (at 0.54 RMB/kWh for first phase and 0.2749 RMB/kWh for second phase), the variation requirement for the investment to reach the benchmark would be a decrease of 11.92%, which is more unlikely (calculation spreadsheet attached).
Incl. 1.Equipment	343.7883	The contracted price for the turbines is 269.35223575 million RMB against the FSR estimate of 271.15 million RMB, though have a decrease, of only 0.66% that has a little impact on the total investment.
2. Installation	16.2669	According to the research report of Central Bank of China[11], the price of the construction material and the costs of the labour had experienced going up during 2007 and 2008 when the construction of the project was in process, a reduction in installation costs is not realistic.
3. Construction	18.4865	According to the research report of Central Bank of China, the price of the construction material and the costs of the labour had experienced going up during 2007 and 2008 when the construction of the project was in process, a reduction in construction costs is not realistic.
4. Other costs	13.8543	Sourced from FSR, has little impact on the total investment.
5. Basic reserve	11.7719	Sourced from FSR, has little impact on the total investment. According to the research report of Central Bank of China, the price of the construction material and the costs of the labour had experienced going up during 2007 and 2008 when the construction of the project was in process, the basic reserve is far from sufficient to compensate for the increased costs in materials and labor costs.

[11] Financial Report issued by Central Bank of China

3) O &M costs:

Based on the sensitivity analysis, the needed annual O & M costs to reach 8% benchmark is 10.4% less than basic assumption. On the one hand, the basic annual O & M costs assumption is from the FSR, which was approved by Inner Mongolia Development & Reform Commission; on the other hand, along with the development of the economy, it is expected that China would have an inflation rate of 3-4% during 2001-2020[12]. Under such circumstances, a reduction of 10.4% in O & M costs is not realistic. Otherwise, the requirement of 10.4% is figured out on the basis of adoption the propositional tariff in the whole operation period, in a conservative manner. Would the sensitivity analysis be carried out with the two-phase tariff (at 0.54 RMB/kWh for first phase and 0.2749 RMB/kWh for second phase), the variation requirement for the O &M costs to reach the benchmark would be a decrease of 54.9%, which is more unlikely (calculation spreadsheet attached).

4) Operating hours:

The needed operating hours to reach the 8% benchmark should have an increase of 2.20%, but the value of the operating hours is sourced from FSR, it is a representative year value, which is figured out by experienced analysts using a professional software WAsP based on 1-year wind data of on-site measurement and long team wind data from a nearby meteorological station. It is unreasonable to have an increase of 2.20% on this representative year value. Otherwise, the requirement of 2.20% is figured out on the basis of adoption the propositional tariff in the whole operation period, in a conservative manner. Would the sensitivity analysis be carried out with the two-phase tariff (at 0.54 RMB/kWh for first phase and 0.2749 RMB/kWh for second phase), the variation requirement for the operating hours to reach the benchmark would be an increase of 16.58%, which is more unlikely (calculation spreadsheet attached).

b) The contracted price for the turbines is 269.35223575 million RMB against the FSR estimate of 271.15 million RMB, though have a decrease, of only 0.66% that has a little impact on the total investment, as clarified above, the total investment is unlikely to have a decrease under present economic circumstance in China.

We hope the EB members are satisfied with our clarification, and the project (2099) be registered soon.

Best regards,

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[12] The forecast of interest rate of RMB in future 20 years