

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

3<sup>th</sup> August. 2009

Dear Members of the CDM Executive Board,

Please find below our response to the issue raised by request for review of the “**Heilongjiang Huanan Hengdaishan East ( II )Wind Power Project**” (UNFCCC Ref. No. 2124).

*1.The DOE is requested to:*

*a) Further explain how the proposed tariff has been determined for the project activity and provide an opinion as to whether the net return to the investor has been reduced as a result of the reduction in tariffs over recent years, or whether the net return has been unaffected as a result of other changes such as investment costs; and*

*b) Clarify why the spreadsheet uses tariff values of 0.5622 yuan per kWh in the first 15 years, then 0.482 in year 16, then 0.415 from year 17 to 21.*

**Re:**

*a)-(1)*

The proposed project is an un-tendering project. The proposed tariff used in the IRR calculation of the PDD is consistent with the FSR. For the tariff assumed in the FSR, there were generally two ways to determine<sup>1</sup>:

Method (1): The third parties (design institutes) usually assessed the tariff according to the industry standard (here refers to the basic return rate of power industry 8%) provided that the essential information of tariff prediction was unavailable or the estimation of the tariff was uncertain at all. The tariff assessed above is to clearly show to the owner of the proposed project that only on the basis that the tariff of this level or above is guaranteed, the project could achieve or exceed the basis return of industry standard, thus obtains the financially attractiveness. The key point of this assessed tariff lies in offering a critical point of profit and loss for the proposed project.

Method (2): If the third parties (design institutes) can make certain judgments about the tariff according to experiences or local wind power situations, the designer would also refer to the tariff level of similar projects which was determined in the PPA (the power purchase agreement signed between the project owner and grid corporation) or the guiding tariff

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1 The illuminates of the experts including design institute, industrial expert and union for tariff policy and the methods to determine the tariff of wind power projects in the FSR

provided by relevant government, and use the tariff above to assess the economic feasibility of the project in the FSR.

For the proposed project, the third party designer and the project owner used the method (2) to determine the tariff used for the IRR calculation of the proposed project.

During the period of the FSR preparation, the latest guiding tariff of wind power projects in the Heilongjiang Province was 0.5622 Yuan/kWh (Excluding VAT) approved by NDRC on 3 December 2007<sup>2</sup>.

*a)-(2)*

Before 2002, China wind farm often received high tariffs and favorable government policy support as power companies and grid companies share the same interests<sup>3</sup>. So the wind power plants were demonstration projects and enjoyed higher price than the present project<sup>4</sup>, which are essential distinctions between the present project and the parts of existing similar projects. Thus they had no restrictions in power grid connection. After 2002, wider power sector reforms<sup>5</sup> in China happened leading to the separation of power generation from transmission and distribution and diversification in the ownership of generation capacity. Especially the implementation of *Law of the People's Republic of China on Renewable Energies*<sup>6</sup> and *Trial Measures for the Administration of Renewable Energy Power Price and Cost-sharing*<sup>7</sup> in 2006, new generation, including wind power, was expected to compete under more commercial conditions. Starting from 2006, the price department of NDRC began to approve guiding tariff of wind power projects. For Heilongjiang Province, the guiding tariff of wind power was first approved on 3 December 2007<sup>8</sup>. Before 3 December 2007, the tariff obtained by the wind power projects in the Heilongjiang Province was not public available except the demonstration projects.

Wind power projects exporting electricity to the Heilongjiang grid as this project activity (both CDM and non CDM projects) and the commissioning dates of these projects are listed in the table below.

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<sup>2</sup> [http://jgs.ndrc.gov.cn/zcfg/t20080218\\_192021.htm](http://jgs.ndrc.gov.cn/zcfg/t20080218_192021.htm)

<sup>3</sup> <http://www.chinabaike.com/law/zy/xz/gwy/1333796.html>

<http://www.nwtc.cn/Article/ShowArticle.asp?ArticleID=422>

<sup>4</sup> <http://www.nwtc.cn/Article/ShowArticle.asp?ArticleID=422>

<http://www.grchina.com/gb/greenpower/advise-0-5.htm>

<sup>5</sup> <http://www.chinabaike.com/law/zy/xz/gwy/1333796.html>

<sup>6</sup> [http://www.gov.cn/ziliao/flfg/2005-06/21/content\\_8275.htm](http://www.gov.cn/ziliao/flfg/2005-06/21/content_8275.htm)

<sup>7</sup> [http://jgs.ndrc.gov.cn/zcfg/t20060120\\_57585.htm](http://jgs.ndrc.gov.cn/zcfg/t20060120_57585.htm)

<sup>8</sup> [http://jgs.ndrc.gov.cn/zcfg/t20080218\\_192021.htm](http://jgs.ndrc.gov.cn/zcfg/t20080218_192021.htm)

No	Item	Commissioning date	Tariff Yuan/kWh (Excluding VAT)
1	Heilongjiang Mulan Wind Power Project	12/2003	0.7189(Demonstration project)
2	Heilongjiang Fujin Wind Power Project	09/2004	0.7281(Demonstration project)
3	Yichun Daqingshan Wind Power Project	12/2005	0.6636 (obtained from the PDD)
4	Heilongjiang Huafu Muling Wind Farm	12/2005	0.6636 (obtained from the PDD)
5	Yichun Shimaodingzi Wind Power Project	11/2006	0.6636 (obtained from the PDD)
6	Yichun Erduoyan Wind Power Project	04/2007	0.6636 (obtained from the PDD)
7	Heilongjiang Wuerguli Wind Power Project	12/2007	0.5622 (guiding tariff)
8	Heilongjiang Muling Daimagou Wind farm Project	12/2007	0.5622 (guiding tariff)
9	Heilongjiang Muling Ganmianshi Wind farm Project	12/2007	0.5622 (guiding tariff)
10	Yichun Xiaochengshan Wind Power Project	12/2007	0.5622 (guiding tariff)
11	Heilongjiang Yilan Maanshan Wind Power Project	12/2007	0.5622 (guiding tariff)
12	Heilongjiang Fujin Phase II 18MW Wind Power Project	12/2007	0.5622 (guiding tariff)
13	Heilongjiang Yilan Hezuolinchang Wind Power Project	12/2007	0.5622 (guiding tariff)
14	Guohua Qiqihaer Fuyu 1 st Stage Wind Farm Project	12/2007	0.5622 (guiding tariff)
15	Heilongjiang Huanan Hengdaishan East Wind Power Project	02/2008	0.5622(guiding tariff)
16	Heilongjiang Huanan Hengdaishan West Wind Power Project	08/2008	0.5622 (guiding tariff)
17	<u>Heilongjiang Yilan Hezuolinchang Phase II Wind Power Project</u>	10/2008	0.5622(guiding tariff)
18	Heilongjiang Dajiazishan 49.5MW Wind Power Project	12/2008	0.5622(guiding tariff)
19	Heilongjiang Beiantun 49.5MW Wind Power Project	12/2008	0.5622(guiding tariff)
20	Heilongjiang Fujin 48MW Wind Power Project	12/2008	0.5622(guiding tariff)
21	Heilongjiang Daqing Ruihao Wind	12/2008	0.5622(guiding tariff)

	Farm Project		
22	Heilongjiang Fuyuan Wind Power Project	03/2009	0.5622(guiding tariff)
23	Heilongjiang Huanan Hengdaishan East (II) Wind Power Project	05/2009	0.5622(guiding tariff)
24	Heilongjiang Mudanjiang Xiaoguokui Wind Power Project	05/2009	0.5622(guiding tariff)
25	Heilongjiang Shaobaishan Wind Power Project	Under construction	0.5622(guiding tariff)
26	Heilongjiang Dabaishan Wind Power Project*	Under construction	0.5622(guiding tariff)
27	Heilongjiang Dongning Dajiazishan and Xidagang Wind Farm Project*	Under construction	—
28	Heilongjiang Shiwenzi Wind Farm Project*	Under construction	—
29	Heilongjiang Yilan Jiguanlazishan Wind Farm Project*	Under construction	—
30	Heilongjiang Yilan Fuqiang Wind Power Project*	Under construction	—
31	Heilongjiang Yilan Chenguang Wind Power Project*	Under construction	—
32	Heilongjiang Hailin Weihushan Wind Power Project*	Under construction	—
33	Heilongjiang Hailin Weihushan Phase II Wind Power Project*	Under construction	—
34	Heilongjiang Huachuan Sujiadian Wind Power Project*	Under construction	—
35	Heilongjiang Huanan Yimashan Wind Power Project*	Under construction	—
36	Heilongjiang Yilan Maoyangou Changjiangtun Wind Power Project*	Under construction	—

**\*Note:** the approval of guiding tariff for wind power projects usually has a delay compared to the project construction. Therefore, some under-construction projects in the above table have not obtained the guiding tariff yet, the tariff of which is expressed as blank in the above table.

*Data Source:*

1. Shi Pengfei (Deputy Director, Chinese Wind Energy Association), Statistics on China Wind Farm Installed Capacity in 2007. ([http://www.cwea.org.cn/download/display\\_info.asp?id=25](http://www.cwea.org.cn/download/display_info.asp?id=25))
2. Heilongjiang Price Journal, 2005 No. 1
3. Yichun Daqingshan : <http://cdm.unfccc.int/Projects/DB/DNV-CUK1167140122.7/view.html>
4. Huafu Muling: <http://cdm.unfccc.int/Projects/DB/DNV-CUK1169849299.65/view.html>
5. Yichun Shimaoding: <http://cdm.unfccc.int/Projects/DB/DNV-CUK1180509799.76/view.html>
6. Yichun Erduoyan : <http://cdm.unfccc.int/Projects/DB/DNV-CUK1172484180.34/view.html>
7. Tariff approval in the wind power projects from NDRC of China, 3 December 2007

[http://jgs.ndrc.gov.cn/zcfg/t20080218\\_192021.htm](http://jgs.ndrc.gov.cn/zcfg/t20080218_192021.htm)

8. Tariff approval in the wind power projects from NDRC of China, 23 July 2008

[http://jgs.ndrc.gov.cn/zcfg/t20080813\\_230722.htm](http://jgs.ndrc.gov.cn/zcfg/t20080813_230722.htm)

9. Heilongjiang Muling Daimagou Project and Heilongjiang Ganmianshi Project:

information from the project owner ([http://www.muling.gov.cn/zsyj/cyjd\\_nr\\_2.asp?id=12136](http://www.muling.gov.cn/zsyj/cyjd_nr_2.asp?id=12136))

10. Heilongjiang Huanan Hengdaishan Projects:

<http://jiamusi.dbw.cn/system/2009/04/01/051837776.shtml>

11. Heilongjiang Dajiazishan Project and Heilongjiang Beiantun Project:

<http://www.chinapower.com.cn/article/1144/art1144386.asp>

12. Heilongjiang Fujin Projects: <http://jmskjxx.com/www/list.asp?id=366>

13. Heilongjiang Daqing Ruihao: <http://www.86wind.com/info/detail/3-7996.html>

14. Heilongjiang Fuyuan: <http://www.fenglifadian.com/news/26565AE3A.html>

15. Heilongjiang Mudanjiang Xiaoguokui:

<http://www.chinapower.com.cn/article/1154/art1154612.asp>

16. Heilongjiang Shaobaishan Project and Heilongjiang Dabaishan Project:

information from the project owner (<http://yichun.dbw.cn/system/2009/05/06/051899498.shtml>)

17. Heilongjiang Dongning Dajiazishan and Xidagang: information from the project owner

(<http://ds.smehlj.gov.cn/site/sites/dongning/2332181779415/content.fdp?contentId=2450656336475>)

18. Heilongjiang Shiwenzi: information from the project owner

(<http://admin.ds.smehlj.gov.cn/site/sites/sfh/2269632603286/content.fdp?contentId=2423168246978>)

19. Heilongjiang Yilan Jiguanlazishan: information from the project owner

(<http://www.hrbyl.gov.cn/jdmc/2008-5-9/08-85-977.html>)

20. Heilongjiang Yilan Fuqiang: <http://www.chinapower.com.cn/article/1153/art1153027.asp>

21. Heilongjiang Chenguang: <http://www.sxcoal.com/energy/2009/06/15/446874/article.html>

22. Heilongjiang Hailin Weihushan Project and Heilongjiang Huachuan Sujadian Project:

<http://www.chinapower.com.cn/newsarticle/1089/new1089894.asp>

23. Heilongjiang Huanan Yimashan:

<http://news.chinacsw.com/citynew/xxlb/20081017085739.htm>

24. Heilongjiang Yilan Maoyangou: <http://www.fenglifadian.com/zhaobiao/37542J5GH.html>

Based on the statics for the tariffs of wind power projects in Heilongjiang Province shown in the above table, from 2003 to 2004, the wind power development in the Heilongjiang Province was in the earlier demonstration phase. In order to encourage the wind power development, the wind power projects obtained the higher tariff. In 2005 and 2006, the wind power development in the Heilongjiang Province was in the earlier business development phase and there were a few wind power projects with the higher investment per kW installed capacity, but the tariff of which were lower than the demonstration projects built in 2003 and 2004. Moreover, these wind power projects are all CDM projects with the tariffs under the commercial condition. After 2006, the wind power develops rapidly in China and there is more wind power projects built in the Heilongjiang Province. With the more and more mature wind power technology development and the more and more expanded wind power market scale, in order to avoid the unreasoning development and the improper competition, the guiding tariff of wind power

projects is issued to regulate the development, which makes the wind power industry to better development. The guiding tariff of wind power projects at present in China tends to be more reasonable, which will conduct the China wind power industry to better develop<sup>9</sup>.

Furthermore, the reduction in tariff has not resulted in a reduction of the incentive for investment in wind power generation and the return on investment has not been substantially lowered as a result of the reduction in the tariffs, as demonstrated by the following facts:

(1)The wind energy is one of the renewable energy stipulated in *Law of the People's Republic of China on Renewable Energies*<sup>10</sup> taken effect in 2006. The development and employment of renewable energy is a priority in energy development field. In March 2008, the NDRC of China has published the Renewable Energy Development Plan for the 11<sup>th</sup> Five-year Period<sup>11</sup>, in which it puts forward a general goal for renewable energy development during the 11<sup>th</sup> Five-year Period, which is, to speed up the exploitation and utility of renewable energy including wind power industry.

(2)The *Statistics on Installed Capacity of Wind Power Projects* in Heilongjiang Province issued by China Wind Energy Association is as below (Unit: kW),

Year	2004	2005	2006	2007	2008
Installed Capacity	36300	57350	165750	408250	836300

It can be seen from the statistics that the installed capacity addition has increased a lot since 2004. It is also the trend all over China. Recently, the installed capacity of wind power in China has continuously doubled its growth, said Shi Lishan, Deputy Director of New/Renewable Department, National Energy Administration. By the end of 2008, the installed capacity of Chinese wind power has leapt to No. 4 worldwide<sup>12</sup>.

(3)The wind power technology and equipment maintenance becomes more and more mature, and there are independent domestic technologies and manufacturers available, e.g. the market share addition for domestic manufacturers from 2004 to 2007 is 25%, 29.4%, 41.3%, and 55.9% respectively<sup>13</sup>. The below table shows the trend of investment per kW and annual O & M costs per kW in Heilongjiang Province since 2002.

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<sup>9</sup> By Mr. Shi Pengfei, Deputy Director, Chinese Wind Energy Association, on 28 February 2008 (<http://www.chinapower.com.cn/article/1118/art1118811.asp>)

<sup>10</sup> [http://www.gov.cn/ziliao/flfg/2005-06/21/content\\_8275.htm](http://www.gov.cn/ziliao/flfg/2005-06/21/content_8275.htm)

<sup>11</sup> [http://www.sdpc.gov.cn/zcfb/zcfbtz/2008tongzhi/t20080318\\_198262.htm](http://www.sdpc.gov.cn/zcfb/zcfbtz/2008tongzhi/t20080318_198262.htm)

<sup>12</sup> [http://www.gov.cn/jrzq/2009-06/02/content\\_1330639.htm](http://www.gov.cn/jrzq/2009-06/02/content_1330639.htm)

<sup>13</sup> Statistics on Installed Capacity of Wind Power Projects issued by China Wind Energy Association, whose statistics has been widely cited in common practice

No	Item	Commissioning date	Tariff Yuan/kWh (Excluding VAT)	Investment per kW installed capacity (Yuan/kW)	Annual O & M costs per kW installed capacity (Yuan/kW)
1	Heilongjiang Mulan Wind Power Project	12/2003	0.7189(Demonstration project)	—	—
2	Heilongjiang Fujin Wind Power Project	09/2004	0.7281(Demonstration project)	—	—
3	Yichun Daqingshan Wind Power Project	12/2005	0.6636 (obtained from the PDD)	10176	466
4	Yichun Shimaodingzi Wind Power Project	11/2006	0.6636 (obtained from the PDD)	9834	474
5	Yichun Erduoyan Wind Power Project	04/2007	0.6636 (obtained from the PDD)	9231	452
6	Heilongjiang Hengdaishan East(II) Wind Power Project(The proposed project)	10/2008	0.5622 (the tariff is used in the PDD)	8764	392

*Data Source:*

1. Shi Pengfei (Deputy Director, Chinese Wind Energy Association), *Statistics on China Wind Farm Installed Capacity 2007*.
2. Heilongjiang Price Journal, 2005 No. 1
3. Yichun Daqingshan : <http://cdm.unfccc.int/Projects/DB/DNV-CUK1167140122.7/view.html>
4. Huafu Muling: <http://cdm.unfccc.int/Projects/DB/DNV-CUK1169849299.65/view.html>
5. Yichun Shimaoding: <http://cdm.unfccc.int/Projects/DB/DNV-CUK1180509799.76/view.html>
6. Yichun Erduoyan : <http://cdm.unfccc.int/Projects/DB/DNV-CUK1172484180.34/view.html>

Therefore, the net return to the investor has not been reduced as a result of the reduction in tariffs because of the law and policy support from the government, the more and more expanded wind power market scale and the more and more mature domestic wind power technology development.

b) According to the formal document for tariff guidance to wind power projects in China issued

by NDRC<sup>14</sup>, the tariff of wind power projects after the 30000 hours of operation should implement the average tariff in the grid. Moreover, the average tariff in Heilongjiang should also be dominated by the thermal power tariff. The benchmark thermal power tariff in Heilongjiang is only 0.312 Yuan/kWh (excl. VAT) shown in the document FAGAI PRICE [ 2 0 0 8] No.1678<sup>15</sup>.

Based on the above documents and guidance tariffs, the tariff of the project should be 0.5622 Yuan/kWh in the first 30000 hours of operation and 0.312 Yuan/kWh (excl. VAT) in the last 30000 hours of operation.

However, the project owner didn't determine the actual average tariff in Heilongjiang in the last 30000 hours of operation when the FSR of the project was written. Therefore, the project owner only referred to the latest guidance tariff (0.312 Yuan/kWh (excl. VAT))<sup>16</sup> and used the conservative average tariff in Heilongjiang of 0.415 Yuan/kWh in the last 30000 hours of operation to evaluate the financial analysis, based on the experiments including the statistical trend of average tariff in Heilongjiang.

For the project, the critical point of 30000hours of operation is in year 16 (e.g. 30000/annual operation time). Therefore, the tariff of 0.482 Yuan/kWh in year 16 is the weight average result of 0.5622 Yuan/kWh and 0.415Yuan/kWh in the IRR calculation sheet<sup>17</sup>.

Meanwhile, the project owner used the fixed tariff of 0.5622 Yuan/kWh during the whole operation period to re-evaluate the financial analysis and the IRR of the project is of 7.79%.Therefore, the net return to the investor has not been reduced as a result of the reduction in tariffs over recent years.

**2. The DOE is requested to further clarify how it has cross-checked the input values in line with the guidance of the Validation and Verification Manual paragraph 111 (c).**

**Re:**

The input values used in the investment analysis in the PDD are all sourced from the FSR which is approved by Development and Reform Committee (DRC) of Heilongjiang Province. The FSR was recognized by Expert Appraisal Meeting organized by Project Consulting Audit Centre and of Heilongjiang Province. The investment decision was based on the FSR. The FSR and the approval by DRC of Heilongjiang Province have already been provided to DOE

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<sup>14</sup> [http://www.sdpc.gov.cn/jggl/zcfg/t20080813\\_230726.htm](http://www.sdpc.gov.cn/jggl/zcfg/t20080813_230726.htm)

<sup>15</sup> [http://www.sdpc.gov.cn/zcfb/zcfbtz/2008tongzhi/t20080702\\_222224.htm](http://www.sdpc.gov.cn/zcfb/zcfbtz/2008tongzhi/t20080702_222224.htm)

<sup>16</sup> [http://www.sdpc.gov.cn/zcfb/zcfbtz/2008tongzhi/t20080702\\_222224.htm](http://www.sdpc.gov.cn/zcfb/zcfbtz/2008tongzhi/t20080702_222224.htm)

<sup>17</sup> Formula: operation time: 30000/2075=14.45 years. In 16 years(including construction time), 0.45\*0.5622+0.55\*0.415=0.482)



during validation. As per the guidance of EB 38 para. 54(c), the consistency between the input values in the PDD with the data from the FSR and the validity of the input values had been seriously checked by DOE before the final validation report finished.

Since total investment, O&M costs, electricity tariff and annual electricity generated are the major factors that could impact the financial IRR; the relevant important materials have been requested by the DOE for cross-checking.

### **Total investment**

The total investment is 178.79 Million Yuan and the investment per kilowatt is 8,764 Yuan for the proposed project in the FSR approved by Heilongjiang DRC, which is reasonable according to the investment level of wind power project in China<sup>18</sup>. We have examined 5 similar projects to the proposed project (listed in Table 1) and calculated their investment per kW installed capacity. As Table 1 indicated, compared with the data reported for other similar registered CDM projects in the Heilongjiang province, the total investment is within the acceptable range. The average investment level is calculated as 9,128 Yuan/kWh, which is higher than that in the FSR of the proposed project. Therefore, the total investment in FSR is credible and appropriate to make investment decision.

**Table 1: Similar projects to the proposed project**

No.	Project No.	Project	Investment per kW installed capacity (Yuan/kW)
1	2200	Heilongjiang Huanan Hengdaishan West Wind Power Project	8,276
2	2056	Heilongjiang Huanan Hengdaishan east Wind Power Project	8,809
3	0906	Heilongjiang Huafu Muling Wind Farm Project	11,185
4	2035	Heilongjiang Yilan Maanshan Wind Power Project	8,361
5	2117	Heilongjiang Yilan Hezuolinchang Phase II Wind Power Project	9,012
			Average 9,128
	2124	Heilongjiang Huanan Hengdaishan East ( II )Wind Power Project	8,764

Data source:

1. <http://cdm.unfccc.int/Projects/DB/DNV-CUK1218657862.08/view>

<sup>18</sup> [http://www.stockstar.com/info/darticle.aspx?id=JY\\_20060324\\_00059242](http://www.stockstar.com/info/darticle.aspx?id=JY_20060324_00059242)

2. <http://cdm.unfccc.int/Projects/DB/DNV-CUK1218460144.88/view>
3. <http://cdm.unfccc.int/Projects/DB/DNV-CUK1169849299.65/view>
4. <http://cdm.unfccc.int/Projects/DB/DNV-CUK1218296845.76/view>
5. <http://cdm.unfccc.int/Projects/DB/DNV-CUK1218556051.09/view>

## **Tariff**

According to the PPA, the guiding tariff approved by regulating entities is executed during the operation period. The guiding tariff of the proposed project was approved finally by National Development and Reform Committee (NDRC) of China as 0.5622 Yuan/kWh (excl. VAT) within 30000 operation hours and using the average tariff of Heilongjiang Power Grid beyond 30000 operation hours in July 2008<sup>19</sup>. Since Heilongjiang power grid is dominated by thermal power plants, where thermal power generation accounts for more than 97.5% of the total power generation<sup>20</sup>, the average tariff in the grid should also be approximately equal to thermal power tariff. The benchmark thermal power tariff in Heilongjiang grid is only 0.312Yuan/kWh (excl. VAT)<sup>21</sup>. Therefore, after operating 30000 hours, the tariff of the proposed project tends to decrease. Furthermore, evidenced with the electricity sales invoice, the actual executive tariff in electric power transaction is the same as the guiding tariff issued by the government. Therefore, the tariff used for IRR calculation in the PDD is more conservative. The PPA, the tariff approval and the electricity sales invoice have been provided to DOE for cross-checking.

## **Annual output**

According to the feasibility study report of the proposed project, the annual output is estimated based on the long term weather statistic data provided by local meteorological station and wind resources measurement, first using professional software WAsP to select the rich wind source area, and then using software WindFarmer to optimize the location of each turbine for maximize power generation. This method and professional software have been used in many projects in China, so the calculated annual output is credible, accurate and appropriate to be used in the investment decision. Moreover, the annual output is validated and confirmed by the experts in wind power field. The Expert Panel Opinion on Heilongjiang Huanan Hengdaishan East (II) Wind Power Project has been provided to DOE for cross-check.

Furthermore, compared with the projects in Table 2, the average annual operation hour is 2145, which is close with the one in FSR of the proposed project. Therefore, the annual output in the FSR is credible and appropriate to make investment decision.

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<sup>19</sup> [http://jgs.ndrc.gov.cn/zcfg/t20080813\\_230722.htm](http://jgs.ndrc.gov.cn/zcfg/t20080813_230722.htm)

<sup>20</sup> China Electric Power Yearbook 2007

<sup>21</sup> [http://www.sdpc.gov.cn/zcfb/zcfbtz/2008tongzhi/t20080702\\_222224.htm](http://www.sdpc.gov.cn/zcfb/zcfbtz/2008tongzhi/t20080702_222224.htm)

**Table 2: Similar projects to the proposed project**

No.	Project No.	Project	Predicted Annual operation hour in FSR (h)
1	2200	Heilongjiang Huanan Hengdaishan West Wind Power Project	2070
2	2056	Heilongjiang Huanan Hengdaishan east Wind Power Project	2081
3	0906	Heilongjiang Huafu Muling Wind Farm Project	2232
4	2035	Heilongjiang Yilan Maanshan Wind Power Project	2070
5	2117	Heilongjiang Yilan Hezuolinchang Phase II Wind Power Project	2273
			Average 2145
	2124	Heilongjiang Huanan Hengdaishan East ( II )Wind Power Project	2075

Data source:

1. <http://cdm.unfccc.int/Projects/DB/DNV-CUK1218657862.08/view>
2. <http://cdm.unfccc.int/Projects/DB/DNV-CUK1218460144.88/view>
3. <http://cdm.unfccc.int/Projects/DB/DNV-CUK1169849299.65/view>
4. <http://cdm.unfccc.int/Projects/DB/DNV-CUK1218296845.76/view>
5. <http://cdm.unfccc.int/Projects/DB/DNV-CUK1218556051.09/view>

### O&M Costs

The O&M costs include several costs like maintenance fee, employees' salary and welfares, premium fee, material costs and other costs etc. The price of material and salaries of the employees are gradually increasing in China, which leads annual O&M costs gradually increasing<sup>22</sup>. And also, by comparing the percentage of average annual O&M costs<sup>23</sup> relative to total investment of the proposed project with other registered CDM wind projects in Heilongjiang province, the validity of the O&M costs can also be confirmed. Furthermore, compared with the projects in Table 3, the average ratio of average annual O & M costs against total investment is 3.54%, which is higher than the one in FSR of the proposed project. Therefore, the O & M cost in the FSR is credible and appropriate to make investment decision.

**Table 3: Similar projects to the proposed project**

<sup>22</sup> <http://www.china.com.cn/chinese/EC-c/1246238.htm>

[http://www.chinadaily.com.cn/hqcj/2007-09/03/content\\_6075777.htm](http://www.chinadaily.com.cn/hqcj/2007-09/03/content_6075777.htm)

<sup>23</sup> This is the average data of 20 operational years.

No.	Project No.	Project	Ratio of average annual O & M costs against investment
1	2200	Heilongjiang Huanan Hengdaishan West Wind Power Project	3.93%
2	2056	Heilongjiang Huanan Hengdaishan east Wind Power Project	4.3%
3	0906	Heilongjiang Huafu Muling Wind Farm Project	2.75%
4	2035	Heilongjiang Yilan Maanshan Wind Power Project	3.58%
5	2117	Heilongjiang Yilan Hezuolinchang Phase II Wind Power Project	3.14%
			Average 3.54%
	2124	Heilongjiang Huanan Hengdaishan East ( II )Wind Power Project	2.19%

Data source:

1. <http://cdm.unfccc.int/Projects/DB/DNV-CUK1218657862.08/view>
2. <http://cdm.unfccc.int/Projects/DB/DNV-CUK1218460144.88/view>
3. <http://cdm.unfccc.int/Projects/DB/DNV-CUK1169849299.65/view>
4. <http://cdm.unfccc.int/Projects/DB/DNV-CUK1218296845.76/view>
5. <http://cdm.unfccc.int/Projects/DB/DNV-CUK1218556051.09/view>

We sincerely hope that the information provided adequately addresses the concerns raised.

Best regards,



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