

RESPONSE TO THE REVIEW REQUEST

Bureau Veritas Certification (formerly BVQI) had performed the validation of the CDM Project 2775- "Heilongjiang Fuyuan Wind Power Project". Subsequently, there were two requests for review.

Our responses to the review requests raised are given below:

Issue 1 for request for review

Clarification is sought how the DOE has validated the input values to the investment analysis as per VVM, para 111 (c).

Bureau Veritas Certification's response:

Following the requirement of VVM paragraph 111(c), BVC has verified that the investment analysis and found that the input values used to conduct the investment analysis are all taken from the Feasibility Study Report (FSR) which was carried out by a qualified third party and approved by Hebei Province Development and Reform Committee.

By checking the FSR, BVC confirms that the FSR refers to:

- Codes on Compiling Feasibility Study Report of Wind Farms;
- Preparation Rules and Calculation Standard for Budgetary Estimation of Wind Power Projects Feasibility Study Report issued by NDRC;
- Economic Evaluation Method and Parameters for Project Construction (version 3);
- Electric Power Engineering Budget Estimation Quota [2002].

Therefore, BVC confirms that the input values from the FSR were valid and applicable at the time of the investment decision.

BVC has crosschecked the input values from the FSR as follows:

1. Total Investment

The total investment in the FSR has been crosschecked with the already signed contracts of key equipments and construction contract, and found that the total value of the already signed contracts is slightly higher than the sub-items estimated in the FSR, therefore, the assumptions for the total investment is reasonable and appropriate.

Furthermore, the financial inspection report issued by Heilongjiang branch of China construction bank indicated that the actual total investment spent for the proposed project is 264.33 million RMB, which is 3% higher than the estimated investment in the FSR. therefore, BVC confirms that the total investment of the proposed project is appropriate and conservative.

2, Average Annual Output

By checking the FSR, it was found that the proposed project is a wind power project with a total installed capacity of 31.5MW, the annual electricity delivered to the grid is 64,200MWh thus the annual utilization hours are 2,038hours with the plant load factor (PLF) of 23.26%. The annual operation hours in FSR was estimated in accordance with "Wind Resources Measurement Method of Wind Farms" (GB/T 18709-2002) and "Wind Resources Evaluation Method of Wind farms" (GB/T 18710-2002), based on the average historical wind data of wind resources in the

thus, this value can be considered as appropriate. Since the FSR was carried out by an authorized third party and approved by Heilongjiang Provincial Development and Reform Committee. Therefore, BVC was able to confirm that the PLF of 23.26% was determined by a qualified third party contract with the project owner, and is the same one provided in the FSR to the government while applying the project activity for implementation approval, thus comply with the Guidelines for the Reporting and Validation of Plant Load Factors (version 1) (EB48, Annex 11).

The installed capacity of the Project is fixed according to the signed wind turbine purchase agreement, thus the annual output is determined by the PLF, as discussed above, the PLF is determined appropriately. Therefore, BVC confirms that the annual output of the proposed project is appropriate.

3. Annual O&M cost

The annual O&M cost is the sum of salary and welfare of employees, materials fee, maintenance fee and miscellaneous account, which was studied based on the “Code on Compiling Feasibility Study Report of Wind Farms” issued by NDRC and Economic Evaluation Method and Parameters for Project Construction (version 3).

Furthermore, BVC has checked the registered CDM wind power projects in Heilongjiang Province and summarized as below:

Table 1 Total investment of wind power projects in Heilongjiang Province

No.	UNFCCC Ref.	Project Title	Total investment (million RMB)	Annual O&M cost (million RMB)	Ratio of average annual O&M cost against total investment (RMB/kW)
1	0829	Yichun Daqingshan Wind Power Project	164.340	7.528	4.58%
2	0906	Heilongjiang Huafu Muling Wind Farm	349.000	9.600	2.75%
3	0969	Yichun Erduoyan Wind Power Project	258.920	12.690	4.90%
4	1147	Yichun Shimaodingzi Wind Power Project	300.920	14.496	4.82%
5	1209	Wuerguli 30 MW Wind Power Project	327.710	6.590	2.01%
6	1310	Guohua Qiqihaer Fuyu 1st Stage Wind Farm Project	419.310	10.480	2.50%
7	1816	Heilongjiang Shiwenzi Wind Farm Project	545.250	35.170	6.45%
8	2032	Heilongjiang Dajiazishan 49.5MW Wind Power Project	478.550	12.260	2.56%



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9	2035	Heilongjiang Yilan Maanshan Wind Power Project	412.200	14.780	3.59%
10	2049	Heilongjiang Beiantun 49.5MW Wind Power Project	465.789	12.010	2.58%
11	2056	Heilongjiang Huanan Hengdaishan East Wind Power Project	217.150	9.380	4.32%
12	2200	Heilongjiang Huanan Hengdaishan West Wind Power Project	372.840	14.660	3.93%
	Average				3.75%
	The proposed project	Heilongjiang Fuyuan Wind Power Project	256.49	8.73	3.40%

From above table, we can find that the ratio of average annual O & M costs against total investment for the proposed project is less than the average one of all registered wind power projects in Heilongjiang province, therefore, BVC confirms that the annual O & M cost of the proposed project is appropriate.

4, Tariff

The tariff of 0.5622RMB/kWh (excl. VAT) has been crosschecked the Power Purchase Agreement (PPA) signed between the PP and grid company in Jul. 2009, and found that the tariff committed by the grid company is the one approved by the government, i.e. 0.5622RMB/kWh (excl. VAT). Furthermore, the tariff approved by finally by National Development and Reform Committee (NDRC) of China as 0.5622RMB/kWh (excl. VAT) within 30000 operation hours and down to the average tariff of Heilongjiang Power Grid after 30000 operation hours in July 2008 (Document Fa Gai Jia Ge [2008]1876). In addition, by checking the electricity sales invoice, BVC is able to confirm that the actual executive tariff in electric power transaction is the same as the guiding tariff issued by NDRC. Therefore, the fixed tariff used for IRR calculation in the PDD is appropriate and conservative.

Therefore, BVC can confirm that the input values to the investment analysis, including the total investment, annual O&M cost, annual output and tariff used for the proposed project are appropriate, which is in accordance with the requirement of VVV Para. 111(c), i.e. the input values used in the FSR are valid and applicable at the time of investment decision.

Issue 1 for request for review

The DOE is requested to further explain how the proposed tariff has been determined for the project activity and provide an assessment as to whether the net return to the investor has been reduced as a result of any reduction in tariffs over recent years, or whether the net return has been unaffected as a result of other changes such as investment costs. These questions are relevant since it is noticed that the highest historical tariff for wind projects in Heilongjiang Province is 0.6636 (excl. VAT) i.e. 0.72 RMB/kWh incl. VAT as per the wind power data base maintained by the UNFCCC secretariat (registered wind



projects as of EB 49). The project IRR applying the highest historical tariff increases to 9.64% i.e. it crosses the benchmark of 8%.

In case a reduction of total costs over time can only partly justify the tariff decrease over time, PP/DOE should indicate which "reference tariff" would have been 100% in line with the cost reductions only and explain the impact of such a "reference tariff" on the IRR calculations.

Bureau Veritas Certification's response:

The proposed tariff of 0.5622RMB/kWh (excl. VAT) in the PDD is derived from the FSR of the proposed project finalized in Jul. 2007, which was approved by local DRC on 27/11/2007. The determination of tariff is in accordance with the two official documents as below,

a. Trial Measures for the Administration of Renewable Energy Power Price and Cost-sharing the tariff of renewable energy project would be 0.25RMB/kWh (incl.VAT) higher than the tariff for thermal power projects;

b. Notice on the Adjustment of Electricity Price of North China Grid by NDRC (Code: Fa Gai Jia Ge [2006] No.1231) dated 28/06/2006, which stated that the tariff for thermal power projects (equal to commercial average tariff) in Heilongjiang Grid covered by NEPG was 0.3567RMB/kWh (incl. VAT);

Given above, the tariff of the Project was estimated as 0.61RMB/kWh($\approx 0.25 + 0.3567$, incl. VAT) or 0.5622 RMB/kWh (excl. VAT) in the FSR of the Project. In Heilongjiang, the commercial average tariff was determined based on tariff of thermal power, which is 0.3567RMB/kWh (incl. VAT) or 0.3049RMB/kWh (excl. VAT) at the time of investment decision.

After the FSR finalized, there are three tariff notifications for wind power projects in Heilongjiang were issued, i.e. Hei Jia Ge Zi [2007]194 dated Sep. 2007, Fa Gai Jia Ge (2007) No.3303 dated 03/12/2007 and Fa Gai Jia Ge (2008) No.1876 dated 23/07/2008. In the tariff notification Hei Jia Ge Zi [2007]194 mentioned the tariff of 0.61RMB/kWh ($\approx 0.3567 + 0.25$, as clarified in the tariff notification) had been endorsed to Heilongjiang Muling Daimagou Wind farm Project and Heilongjiang Muling Ganmianshi Wind farm Project (Projects No. 7 and 8 in below table) by Heilongjiang Price Bureau in September 2007. Both two projects were also implemented with application of the CDM registration as the same investment situation with the Project. In the tariff notification of Fa Gai Jia Ge (2007) No.3303 and Fa Gai Jia Ge (2008) No.1876, the tariff for total 18 wind power projects including the proposed listed in the two tariff notifications is 0.5622RMB/kWh (excl. VAT) for accumulated equivalent full load 30,000 hours, and after that a commercial average tariff of Heilongjiang will be employed.

By checking with the above tariff information, BVC was able to verify that the tariff of 0.5622RMB/kWh (excl. VAT) for the whole operation period used in both FSR and PDD are reasonable and appropriate.

BVC has checked the information on wind power projects exporting electricity to Heilongjiang Provincial Grid and the tariff documents for wind power projects issued by China's government, the tariff for wind power projects exporting electricity to Heilongjiang Provincial Grid are summarized in the following table 2:



Table 2 Tariff for wind power projects in Heilongjiang Province

No	Project	Tariff (RMB/kWh, Excl. VAT)	Document No.	Tariff determined time	Commissioning date	CDM projec t or Not?
1	Heilongjiang Mulan Wind Power Project	0.7189	Hei Jia Ge Zi [2004]233	2004	Dec. 2003	No
2	Heilongjiang Fujin Wind Power Project	0.7281	Hei Jia Ge Zi [2004]226	2004	Sep. 2004	No
3	Yichun Daqingshan Wind Power Project (UNFCCC Ref. No. 0829)	0.6636	Hei Jia Ge Zi [2005]270	2005	Dec. 2005	Yes
4	Heilongjiang Huafu Muling Wind Farm (UNFCCC Ref. No. 0906)	0.6636	Hei Jia Ge Zi [2005]267	2005	Dec. 2005	Yes
5	Yichun Shimaodingzi Wind Power Project (UNFCCC Ref. No. 1147)	0.6636	Hei Jia Ge Zi [2005]270	2005	Nov. 2006	Yes
6	Yichun Erduoyan Wind Power Project (UNFCCC Ref. No. 0969)	0.6636	Hei Jia Ge Zi [2005]270	2005	May 2007	Yes
7	Heilongjiang Muling Daimagou Wind farm Project (under validation)	0.5622	Hei Jia Ge Zi [2007]194	Sep. 2007	Dec. 2006	Yes
8	Heilongjiang Muling Ganmianshi Wind farm Project (under validation)	0.5622	Hei Jia Ge Zi [2007]194	Sep. 2007	Dec. 2006	Yes
9	Wuerguli 30 MW Wind Power Project (UNFCCC Ref. No. 1209, the Project)	0.5622	Fa Gai Jia ge [2007]3303	Dec. 2007	Nov. 2007	Yes



10	Yichun Xiaochengshan Wind Power Project (UNFCCC Ref. No. 2312)	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	Dec. 2007	Yes
11	Heilongjiang Yilan Maanshan Wind Power Project (UNFCCC Ref. No. 2035)	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	Dec. 2007	Yes
12	Heilongjiang Fujin Phase II 18MW Wind Power Project (UNFCCC Ref. No. 1866)	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	Dec. 2007	Yes
13	Heilongjiang Yilan Hezuolinchang Wind Power Project (UNFCCC Ref. No. 2062)	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	Dec. 2007	Yes
14	Guohua Qiqihaer Fuyu 1st Stage Wind Farm Project (UNFCCC Ref. No. 1310)	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	Dec. 2007	Yes
15	Heilongjiang Huanan Hengdaishan East Wind Power Project (UNFCCC Ref. No. 2056)	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	Mar. 2008	Yes
16	Heilongjiang Huanan Hengdaishan West Wind Power Project (UNFCCC Ref. No. 2200)	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	Jul. 2008	Yes
17	Heilongjiang Yilan Hezuolinchang Phase II Wind	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	Oct. 2008	Yes



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	Power Project (UNFCCC Ref. No. 2117)					
18	Heilongjiang Dajiazishan 49.5MW Wind Power Project (UNFCCC Ref. No. 2032)	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	Dec. 2008	Yes
19	Heilongjiang Beiantun 49.5MW Wind Power Project (UNFCCC Ref. No. 2049)	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	Dec. 2008	Yes
20	Heilongjiang Fujin 48MW Wind Power Project (UNFCCC Ref. No. 2573)	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	Dec. 2008	Yes
21	Heilongjiang Daqing Ruihao Wind Farm Project (UNFCCC Ref. No. 2776)	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	Dec. 2008	Yes
22	Heilongjiang Fuyuan Wind Power Project (UNFCCC Ref. No. 2775, the proposed project)	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	Mar. 2009	Yes
23	Heilongjiang Huanan Hengdaishan East (II) Wind Power Project (UNFCCC Ref. No. 2124)	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	May 2009	Yes
24	Heilongjiang Mudanjiang Xiaoguokui Wind Power Project (UNFCCC Ref. No. 2774)	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	May 2009	Yes
25	Heilongjiang Shaobaishan Wind Power	0.5622	Fa Gai Jia ge [2008] 1876	Jul. 2008	Under construction	Yes



	Project (UNFCCC Ref. No. 2777)					
26	Heilongjiang Dabaishan Wind Power Project(UNFCCC Ref. No. 2776)	0.5622	Fa Gai Jia Ge [2008] 1876	Jul. 2008	Under construction	Yes
27	Heilongjiang Wuerguli Wind Power Project (UNFCCC Ref. No. 2152)	0.5622	Fa Gai Jia Ge [2009]1906	Jul. 2009	Oct. 2008	Yes
28	Heilongjiang Dongning Dajiazishan and Xidagang Wind Farm Project (under validation)	0.5622	Fa Gai Jia Ge [2009]1906	Jul. 2009	Under construction	Yes
29	Heilongjiang Shiwenzi Wind Farm Project (UNFCCC Ref. No. 1816)	0.5622	Fa Gai Jia Ge [2009]1906	Jul. 2009	Under construction	Yes
30	Heilongjiang Yilan Jiguanlazishan Wind Farm Project (under validation)	0.5622	Fa Gai Jia Ge [2009]1906	Jul. 2009	Under construction	Yes
31	Heilongjiang Yilan Fuqiang Wind Power Project (under validation)	0.5622	Fa Gai Jia Ge [2009]1906	Jul. 2009	Under construction	Yes
32	Heilongjiang Yilan Chenguang Wind Power Project (under validation)	0.5622	Fa Gai Jia Ge [2009]1906	Jul. 2009	Under construction	Yes
33	Heilongjiang Hailin Weihushan Wind Power Project (under validation)	0.5622	Fa Gai Jia Ge [2009]1906	Jul. 2009	Under construction	Yes
34	Heilongjiang Hailin Weihushan Phase II Wind Power Project	0.5622	Fa Gai Jia Ge [2009]1906	Jul. 2009	Under construction	Yes



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	(under validation)					
35	Heilongjiang Huachuan Sujiadian Wind Power Project (under validation)	0.5622	Fa Gai Jia Ge [2009]1906	Jul. 2009	Under construction	Yes
36	Heilongjiang Huanan Yimashan Wind Power Project (under validation)	0.5622	Fa Gai Jia Ge [2009]1906	Jul. 2009	Under construction	Yes
37	Heilongjiang Yilan Maoyangou Changjiangtun Wind Power Project (under validation)	0.5622	Fa Gai Jia Ge [2009]1906	Jul. 2009	Under construction	Yes

Note: All tariff notifications mentioned above just regulated the tariff for wind power projects in the first 30,000 equivalent operation hours, and after that, the tariff of wind power projects will down to the average tariff of thermal power plants.

With the available data source, the validation team can find there are total 37 wind power projects exporting electricity to Heilongjiang Provincial Grid since 2002.

The determination of tariffs in China is a result of sovereign government decision-making. The project participants cannot impact Chinese government policy regarding tariffs and they can only make decision on whether to invest on the Project or not based on the tariff guided by government.

To make the explanation on tariff more clearly, BVC has studied on the information on wind power project and here illustrates the wind power development process as follows:

- In 1999, a Notice on Further Accelerate Renewable Energy Development published by NDRC, Ministry of Science and Technology regulated that the tariff of renewable energy grid power generation project should be determined by "Repayment of Capital and Interest plus profit" during repayment period, i.e. the tariff during the repayment period is different from the one after repayment period, and the length of repayment period impacts on tariff.

In other words, tariff equals generation cost plus tax plus profit; where, generation cost contains depreciation fee, maintenance fee, salary and welfare, insurance, material fee, amortize and interest, and others.

- In Dec. 2001, Notice of the Ministry of Finance and the State Administration of Taxation about Policies regarding the Value Added Tax (VAT) on Products Made through Comprehensive Utilization of Resources and Other Products was published, in the notice, it is clearly stated that the VAT of wind power project should be 50% off; as discussed above, the tax is also a parameter considered to determine tariff;

--The repayment period for wind power projects was changed from 7 years to 15years at the front of 2006. When the repayment period changes from 7years to 15years, the repayment of capital and interest paid for each year would be down accordingly, thus the tariff was reduced.

- On 16/03/2007, the new income tax law was published, in which the income tax was changed from 33% to 25%, which is also a reason of tariff reduction.

- Since 2006, China's government issued the *Law of the People's Republic of China on Renewable Energies and Tentative Management Measures for Price and Sharing of Expenses*



for *Electricity Generation from Renewable Energy* (Document No. Fa Gai Jia Ge [2006]7), so that increase the domestic rate of wind power equipment, reduce wind power generation cost and stimulate the investment incentives.

At the early stage of wind development, most of the wind turbines were imported and the technology in domestic was comparatively dropped behind, thus at that time the investment for wind equipment imported abroad was comparatively higher than that of the domestic-made; furthermore, the technology for operation and maintenance of wind turbines was not very advanced at that time thus the relevant cost was higher.

However, in recent years, with the development of wind power, the overseas manufacturer began to set up factory in China; furthermore encouraged by favorable policies, the Chinese domestic wind turbine manufacturers contributes their efforts in the technology developing, the wind power technology and equipment maintenance becomes more and more mature, and domestic wind turbines have been introduced more and more to some extent, e.g. the market share addition for domestic manufacturers from 2004 to 2007 was 25%, 29.4%, 41.3%, and 55.9% respectively; according to Mr. Luo Zhihong, from China Renewable Energy System Project (CRESP), the price of domestic wind turbine is 20% less than that of the imported wind turbine, the price of wind turbine manufactured in China for overseas manufacturer is 10% less than that of manufactured abroad. Besides, the after service of domestic service is more convenient than abroad manufacture.

Almost all of the projects are CDM projects except for Project No. 1 and No. 2 listed in table 1. However, there are significant distinctions among these two projects and the proposed project activity, as analyzed in the common practice of the PDD, i.e. both projects are demonstration projects, benefited from more favorable financial policy, which were funded by national soft loan and international low interest loan respectively, while the proposed project activity does not enjoy these favorable policies. Thus these two projects are not comparable to the proposed project.

We also exclude the projects with same tariff for further analysis. Therefore, the projects used in this analysis are listed as follows:

Table 3 Information for projects with higher tariff

No.	Project	Tariff RMB /kWh (incl. VAT)	Investment RMB/kW	Annual O&M cost RMB/kWh
1	Yichun Daqingshan Wind Power Project	0.72	10176	0.217
2	Heilongjiang Huafu Muling Wind Farm	0.72	11186	0.138
3	Yichun Shimaodingzi Wind Power Project	0.72	9834	0.221
4	Yichun Erduoyan Wind Power Project	0.72	9231	0.225
Average		0.72	10107	0.2002
5	The proposed project	0.61 (0.5622, excl. VAT)	8143	0.1360

As shown in above table, both the investment and annual O&M cost of the proposed project are less than the average one of those four projects with higher tariffs. If using the higher tariff (0.72RMB/kWh for the first 30,000hours), the average investment per installed capacity



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calculated as 5.65%, lower than the IRR of the proposed project (7.12%) submitted for request for registration. So although the net return to the investor will be reduced as a result of the reduction in tariffs, the net return will be unaffected as a result of other changes such as investment costs, O&M cost and revenue tax etc.

Therefore, BVC is of the opinion that the net return to the investors has been unaffected due to other changes discussed above. On the contrary, the incentives on investment of wind power projects have been increased and there is a large quantity of wind power projects have gone ahead in the most recent years.

The tariff employed in the PDD had been crosschecked with the latest tariff notifications issued by national government in 2008¹ (Fa Gai Jia Ge [2008]1876), the tariff for the proposed project would be 0.5622RMB/kWh (excl. VAT) for the first power generation of 30,000hours, after that, the tariff will be down to the average tariff that refers the tariff for dominant thermal power plants in Heilongjiang Province. Therefore, BVC is of the opinion that the tariff of 0.5622RMB/kWh (excl. VAT) for the whole operating period applied in the investment analysis is appropriate.

As discussed above, a reduction of total costs over time can only partly justify the tariff decrease over time. For the proposed project, if the tariff decrease would have been 100% in line with the cost reductions only, the "reference tariff" would be 0.5452RMB/kWh (excl. VAT), lower than 0.5622RMB/kWh (excl. VAT) used in the PDD and thus result an IRR of 6.68%.

Note: the calculation method, first, use the tariff of 0.72RMB/kWh (incl. VAT), and the average of total investment of projects No. 1 to No. 4 in table 3 in the calculation sheet of the proposed project, and obtain the IRR of 6.68%; second, change the total investment back to the proposed project, and then try to find out the tariff when the IRR can be obtained as 6.68%, and the tariff was calculated as 0.5452RMB/kWh (excl. VAT).

Hope the above responses given clarify the queries raised. In case you have any further inquiries please let us know as we kindly assist you.

Yours faithfully,
Bureau Veritas Certification Holding SAS

Jasmine Tang Xuemei
Team Leader
14/01/2010

Robin Wang Jing
Internal Technical Reviewer
14/01/2010

¹ <http://www.sdpc.gov.cn/printpage.htm>