



VALIDATION REPORT BEIJING RUICHI ELECTRIC POWER INFORMATION TECHNOLOGY Co., LTD

VALIDATION OF THE HEILONGJIANG FUJIN PHASE II 18MW WIND POWER PROJECT

REPORT No. **BVC/CHINA-VAL/0009/2008**

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BUREAU VERITAS CERTIFICATION

VALIDATION REPORT

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Client: Beijing Ruichi Electric Power Information Technology Co. Ltd.	Client ref.: Ms. Yang Lusi

Summary:

Bureau Veritas Certification has made the validation of the Heilongjiang Fujin Phase II 18MW Wind Power Project of Heilongjiang Huafu Wind Power Fujin Co.,Ltd. located in Fujin City, Heilongjiang Province, P.R.China on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study, monitoring plan and other relevant documents, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final validation report and opinion. The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the validation process is a list of Clarification and Corrective Actions Requests (CL and CAR), presented in Appendix A. Taking into account this output, the project proponent revised its project design document.

In summary, it is Bureau Veritas Certification's opinion that the project correctly applies the baseline and monitoring methodology ACM0002 Version 06 and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

Report No.: BVC/CHINA-Val/0009/2008	Subject Group: CDM
Project title: Heilongjiang Fujin Phase II 18MW Wind Power Project	
Work carried out by: Robin Wang –Team Leader Jasmine Tang-Team Member	
Work verified by: H.B. Muralidhar (Reviewer)	
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Indexing terms

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**Abbreviations change / add to the list as necessary**

BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO ₂	Carbon Dioxide
DOE	Designated Operational Entity
EIA	Environmental Impact Assessment (shall be submitted to EPA)
EPA	Environmental Protection Agency
FSR	Feasibility Study Report (shall be submitted to China's NDRC)
GHG	Green House Gas(es)
I	Interview
IETA	International Emissions Trading Association
MoV	Means of Verification
NDRC	(China) National Development Reform Commission
NEPG	Northeast China Power Grid
NGO	Non Government Organization
PCF	Prototype Carbon Fund
PR China	Public Republic China
PDD	Project Design Document
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention for Climate Change
BMS	Bureau Veritas Certification Holding S.A. Management System
CH ₄	Methane
CPP	Captive Power Plant
DIS	Draft of International Standard
DNA	Designated National Authority
DR	Document Review
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
MP	Monitoring Plan
NGO	Non Government Organization
WEGs	Wind Energy Generators
IRR	Internal Rate of Return
LOA	Letter of Approval
ODA	Official Development Assistance
GWP	Global Warming Potential
VVM	Validation and Verification Manual



Table of Contents	Page
1 INTRODUCTION	5
1.1 Objective	5
1.2 Scope	5
1.3 GHG Project Description	6
1.4 Validation team	6
2 METHODOLOGY.....	6
2.1 Review of Documents	9
2.2 Follow-up Interviews	9
2.3 Resolution of Clarification and Corrective Action Requests	10
3 VALIDATION FINDINGS	10
3.1 Project Design	10
3.2 Baseline and Additionality	12
3.3 Calculation of GHG Emissions	18
3.4 Monitoring Plan	19
3.5 Sustainable Development Impacts	20
3.6 Comments by Local Stakeholders	21
4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS.....	21
5 VALIDATION OPINION	22
6 REFERENCES	23

Appendix A: Validation Protocol

Appendix B: Verifiers CV's



1 INTRODUCTION

The Beijing Ruichi Electric Power Information Technology Co., Ltd. (The consultant of the Project) has commissioned Bureau Veritas Certification to validate CDM project Heilongjiang Fujin Phase II 18MW Wind Power Project (hereafter called “the Project”) of Heilongjiang Huafu Wind Power Fujin Co., Ltd. (The Project Participant, hereafter called “the PP”) at Fujian City, Heilongjiang Province, P.R.China.

This report summarizes the findings of the validation of the project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

The validation serves as project design verification and is a requirement of all projects. The validation is an independent third party assessment of the project design. In particular, the project's baseline, the monitoring plan (MP), and the project's compliance with relevant UNFCCC and host country criteria are validated in order to confirm that the project design, as documented, is sound and reasonable, and meets the stated requirements and identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

1.2 Scope

The validation scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The validation is not meant to provide any consulting towards the Client. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project design.



1.3 GHG Project Description

The project “Heilongjiang Fujin Phase II 18MW Wind Power Project ” is sited in the Bielayinshan, 32 km southwest to Fujin City of Heilongjiang Province, which has geographical coordinates with north latitude of 47°04' and east longitude of 131°40'.

The total installed capacity of the Project is 18MW with 12 wind turbines of unit capacity 1500kW. The FL1500 type turbines are manufactured by Sinovel Wind Turbine Co. Ltd. The core technologies of the turbine were introduced from Germany,

The estimated annual electricity supplied to the grid is about 40,716MWh at the full capacity, which will be sold to the Northeast China Power Grid (NEPG). As the NEPG is dominated by thermal power generation, the establishment of the Project is expected to be started in June, 2008 and expected to result in annual emission reduction of 46,657 tCO₂e during the first seven years of renewable crediting period.

1.4 Validation team

The validation team consists of the following personnel:

Robin Wang Jing
Bureau Veritas Certification Team Leader, Climate Change Lead Verifier

Jasmine Tang Xuemei
Bureau Veritas Certification Team Member, Climate Change Verifier

H.B. Muralidhar
Bureau Veritas Certification, Internal reviewer, Climate Change Lead Verifier

2 METHODOLOGY

The overall validation, from Contract Review to Validation Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a validation protocol was customized for the project, according to the Validation and Verification Manual (IETA/PCF). The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:



- It organizes, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The validation protocol consists of five tables. The different columns in these tables are described in Figure 1.

The completed validation protocol is enclosed in Appendix A to this report.

Validation Protocol Table 1: Mandatory Requirements			
Requirement	Reference	Conclusion	Cross reference
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (OK), a Corrective Action Request (CAR) or a Clarification Request (CL) of risk or non-compliance with stated requirements. The CAR's and CL's are numbered and presented to the client in the Validation Report.	Used to refer to the relevant protocol questions in Tables 2, 3 and 4 to show how the specific requirement is validated. This is to ensure a transparent validation process.

Validation Protocol Table 2: Requirements checklist				
Checklist Question	Reference	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organized in several sections. Each section is then further subdivided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question. (See below). Clarification Request (CL) is used when the validation team has identified a need for further clarification.



Validation Protocol Table 3: Baseline and Monitoring Methodologies				
Checklist Question	Reference	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
The various requirements of baseline and monitoring methodologies should be met. The checklist is organized in several sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question. (See below). Clarification Request (CL) is used when the validation team has identified a need for further clarification.

Validation Protocol Table 4: Legal requirements				
Checklist Question	Reference	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
The national legal requirements the project must meet.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a Corrective Action Request (CAR) due to non-compliance with the checklist question. (See below). Clarification Request (CL) is used when the validation team has identified a need for further clarification.

Validation Protocol Table 5: Resolution of Corrective Action and Clarification Requests			
Report clarifications and corrective action requests	Ref. to checklist question in tables 2/3	Summary of project owner response	Validation conclusion
If the conclusions from the Validation are either a Corrective Action Request or a Clarification Request, these should be listed in this section.	Reference to the checklist question number in Tables 2, 3 and 4 where the Corrective Action Request or Clarification Request is explained.	The responses given by the Client or other project participants during the communications with the validation team should be summarized in this section.	This section should summarize the validation team's responses and final conclusions. The conclusions should also be included in Tables 2, 3 and 4, under "Final Conclusion".

Figure 1 Validation protocol tables



2.1 Review of Documents

The Project Design Document (PDD) submitted by Beijing Ruichi Electric Power Information Technology Co., Ltd. and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for Completing the CDM-PDD, Approved methodology, Kyoto Protocol, Clarifications on Validation Requirements to be Checked by a Designated Operational Entity were reviewed.

To address Bureau Veritas Certification corrective action and clarification requests Beijing Ruichi Electric Power Information Technology Co., Ltd. revised the PDD and resubmitted it on 11/08/2008 as version 3./2/

The validation findings presented in this report relate to the project as described in the PDD version 3.

2.2 Follow-up Interviews

On 25/12/2007 Bureau Veritas Certification performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the PP and local stakeholder i.e. residents were interviewed /14/. The main topics of the interviews are summarized in Table 1.

Table 1. Interview topics

Interviewed organization	Interview topics
Heilongjiang Huafu Wind Power Fujin Co., Ltd.(the PP)	<ul style="list-style-type: none"> ➤ Project background information. ➤ Project technology, operation, maintenance and monitoring capability. ➤ Project monitoring and management plan. ➤ Stakeholder consultation process. ➤ Project approval status (incl. EIA approval, CDM project approval status) ➤ Wind power development in the area ➤ Policies related to wind power projects
Local Stakeholder	<ul style="list-style-type: none"> ➤ Identify the topics for interview ➤ Project background in details ➤ Stakeholder comments ➤ Social and environmental impact of the project
Beijing Ruichi Electric Technology Co., Ltd. (the Consultant)	<ul style="list-style-type: none"> ➤ Applicability of selected methodology. ➤ Baseline determination. ➤ Emission reductions calculation. ➤ Monitoring plan.



2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the project design.

To guarantee the transparency of the validation process, the concerns raised are documented in more detail in the validation protocol in Appendix A.

3 VALIDATION FINDINGS

In the following sections, the findings of the validation are stated. The validation findings for each validation subject are presented as follows:

- 1) The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are summarized. A more detailed record of these findings can be found in the Validation Protocol in *Appendix A*.
- 2) Where Bureau Veritas Certification had identified issues that needed clarification or that represented a risk to the fulfillment of the project objectives, a Clarification or Corrective Action Request, respectively, have been issued. The Clarification and Corrective Action Requests are stated, where applicable, in the following sections and are further documented in the Validation Protocol in Appendix A. The validation of the Project resulted in 8 Corrective Action Requests and 20 Clarification Requests.
- 3) The conclusions for validation subject are presented.

3.1 Project Design

Bureau Veritas Certification recognizes that the Project of the PP is helping country fulfill its goals of promoting sustainable development. The project is expected to be in line with host-country specific CDM requirements because it -

- reducing GHG emissions in China compared to the business-as-usual scenario;
- helping to stimulate the growth of wind power industry in China;
- reducing other pollutants resulting from the power generation industry in China, compared to a business-as-usual scenario;



- creating local employment opportunities during the project construction and operation;
- increasing the tax income for local government.

There is also evident in various approvals granted by the local authority of the host country-

- The Feasibility Study Report (FSR) (Document No.23-F2122K-B) of the Project was carried out by an authorized third party viz. Heilongjiang Provincial Institute of Design & Research of Electricity Power in November 2006. [/5/](#)
- Development and Reform Commission of Heilongjiang Province approved the Feasibility Study Report (FSR) of the Project on 30/11/2006 (Document No.HEIFAGAINENGYUAN [2006]1080) [/5/](#) and then permitted the construction of the Project on 29/12/2006. (Document No.A-08)
- Environmental Impact Assessment (EIA) was completed by Jiamusi Institute of Environment Research on 14/09/2005. [/8/](#)
- Environment Protection Bureau of Heilongjiang Province approved the EIA of the Project on 28/09/2005. (Document No. HEIHUANJIANSHEN [2005]91) [/8/](#)
- The project activity of Grid connected wind power and the development of such Grid connected wind power is listed in the Renewable Energy Law, in the 2005 Guiding Catalogue of Industrial Structure Regulation Issued by National Development and Reform Commission and the Development Plan in New Energy Sources and Renewable Energy Sources from Year 2000 to 2015 as development priority of China.

The Project Scenario is considered additional in comparison to the baseline scenario, and therefore eligible to receive Certified Emissions Reductions (CERs) under the CDM, based on an analysis, presented by the PDD, of investment and prevailing practice.

The project design is sound and the geographical (Fujin City, Heilongjiang Province, P.R.China) and temporal (7 years) boundaries of the project are clearly defined.

The DNA of China has issued the Letter of Approval on 17/12/2007 [/3/](#) authorizing Heilongjiang Huafu Wind Power Fujin Co., Ltd. as the project participant and confirmed that the Project contributes to China's sustainable development.



The DNA of United Kingdom has issued a Letter of Approval, authorizing Shell Trading International Ltd. as project participant for the Project in China on 05/06/2008. [/4/](#)

The validation did not reveal any information that indicates that the project can be seen as a diversion of official development assistance (ODA) funding towards China.

3.2 Baseline and Additionality

The Project uses the approved consolidated baseline methodology ACM0002 (Version06). – “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” and “Consolidated monitoring methodology for grid-connected electricity generation from renewable sources”.

The Project meets all applicability conditions of the consolidated baseline methodology ACM0002 as,

- The geographic and system boundaries for the Northeast China Grid can be clearly identified and information on the characteristics of the China Northeast Power Grid is available.
- The Project involves the electricity capacity additions from wind power plant.
- The Project does not involve switching from fossil fuels to renewable energy at the site of the project activity.

According to the consolidated baseline methodology ACM0002, it is applied in compliance with the consolidated monitoring methodology ACM0002; the additionality of the Project is demonstrated and assessed by using the latest approved

- “*Tool for the Demonstration and Assessment of Additionality*” Version 04.
- *Paragraph 54 of Meeting Report of EB 38th.*
- “*Guidance on the Assessment of Investment Analysis*” Version 02 (EB 41 Annex 45)
- “*Guidance on the Demonstration and Assessment of Prior Consideration of the CDM*” (EB 41 Annex 46)

Data and information used in the PDD of the Project are taken from the approved Feasibility Study Report (FSR) of the Project and the Notification on Determining Baseline Emission Factor of China’s Grid



made publicly available on the website of the DNA of China on 09/08/2007./20/

The spatial extent of the project boundary is clearly defined as the site of project activity and all power plants connected physically to Northeast China Grid. This is in line with the delineation of grid boundaries as provided by the DNA of China./20/ The defined project boundary is in line with ACM0002 (Version 06).

The baseline scenario is that the electricity delivered to Northeast China Grid by the Project would have otherwise been generated by the operation of power plants connected to and by the addition of new generation sources in Northeast China Grid. This is reflected in the combined margin (CM), i.e. the weighted average of the operating margin (OM) emissions factor and the build margin (BM) emissions factor. The Weights for OM and BM are defined as 75% and 25% respectively, the default value for wind power project as stipulated by ACM0002 (Version 06).

The emission factors have been determined ex-ante and will remain fixed during the first crediting period.

The Northeast China Grid is dominated by coal-fired power plants. It is deemed likely that coal-fired power plants will continue to dominate the power sector due to the local availability of low cost coal. It is expected that renewable capacity additions will not have significant effects on the mix of the Northeast China Grid during the first crediting period.

Validation team has ensured that the baseline determination is transparent and deemed reasonable.

The additionality of the Project has been demonstrated following the "*Tool for the demonstration and assessment of additionality*" version 04 agreed by the CDM Executive Board as well as the chronological events to show the incentives from CDM were seriously considered prior to the start of the construction of the Project.

According to the latest CDM glossary, the starting date of the Project has been verified to be 18/04/2007,/18/ prior to the date for the validation.

The FSR was completed by Heilongjiang Provincial Institute of Design & Research of Electricity Power in November 2006./5/ In the FSR, the financial indicator was reached the benchmark (Project IRR 8%) based on the feed-in tariff around 0.70RMB/kWh (Incl. VAT) which is referred to the tariff endorsed to the previous wind farms in Heilongjiang Province. Therefore the Project was concluded to be financially feasible in the FSR. However, the latest pricing regulations taken effect by National



Development & Reform Commission (NDRC) for renewable energy generation projects in Heilongjiang Province soon after known by the PP and the FSR editor /6/ According to the latest regulations, the most likely tariff for the newly built wind farms in Heilongjiang Province could be estimated only 0.6067 RMB/kWh (Incl. VAT) which was much lower than that in the FSR and resulted in Project IRR down to 6.70%./12/ It was evident that without any favorable assistance the Project would not be financially feasible.

At the same time, knowing that the development of renewable energy can be supported by carbon finance under CDM mechanism, the PP took a seriously consideration under assistant of CDM consultants. Subsequently, the decision on CDM development for its Project was made on 15/12/2006 right after the FSR approved by the local authority,/9/ and a consulting agreement with Beijing Ruichi Electric Power Information Technology Co. Ltd. was signed on 18/12/2006./11/ The CERs buyers was confirmed afterwards in February 2007./23/ Before long, a news of the first wind power project in Heilongjiang Province viz. Yichun Daqingshan Wind Power Project registered as CDM project on 06/04/2007 (UNFCCC reg. no.0829) convinced the PP on feasibility of the Project. Soon after the turbines purchasing contracts were signed with Sinovel on 18/04/2007/18/ and the construction of the Project launched in June 2007./19/

The all above mentioned events with the documented evidences including approved FSR, meeting minutes of the PP and relevant contracts etc. have been verified and found to be substantial and reasonable under that situation in the wind power sector of the host country.

Especially, according to the “*Paragraph 54 of the Report of EB 38th*” the estimated feed-in tariff for PP’s decision making has been verified against the relevant pricing regulations of the time issued by national or local government and available price information from nearby wind farms which had been commenced by end of the 2007,/24/ and found to be substantial and more reasonable than the value in the FSR. The tariff has been also crosschecked with the Pricing Notification issued by NDRC on 23/07/2008 which shows the formal feed-in tariff endorsed to the Project is 0.61RMB/kWh (Incl. VAT)./12/ Therefore, the estimated feed-in tariff was used for investment decision is deemed to be appropriate. In addition to the tariff, all input value of the PDD and IRR calculation sheet has been checked and found in line with the approved FSR.

(Refer Table 2. B 5.3 of Appendix A of this report for details)

Based on seriously consideration on above data, the validation team has ensured that the PP’s prior consideration of the CDM has been verified in accordance with the “*Guidance on the Demonstration and Assessment of Prior Consideration of the CDM*” (EB41 Annex 46). The evidence from



China's DNA's website to show the necessary documents of the Project were submitted to DNA for approval prior to August 2007,/25/ which is deemed to be substantial to demonstrate the PP was promoting the CDM development with the help of the consultants in parallel with the construction of the Project.

Detailed description for additionality has been reproduced as below:

Step1. Identification of alternatives to the project activity consistent with current laws and regulations

Sub-step 1a. Define alternatives to the project activity:

The four Plausible and credible alternatives were identified:

- Alternative-1: Construction of a fossil fuel fired power plant with equivalent amount of annual electricity generation;
- Alternative-2: The proposed project activity not undertaken as a CDM project activity;
- Alternative-3: Construction of a power plant using other sources of renewable energy with equivalent amount of annual electricity generation;
- Alternative-4: Provision of an equivalent amount of annual power output by the grid into which the project is connected.

Based on the local natural resource the development of hydropower or biomass is unpractical. Hence Alternative 3 is not baseline scenario.

Sub-step 1b. Enforcement of applicable laws and regulations:

For Alternative-1, the annual electricity generation of fuel-fired power plant with installed capacity less than 10MW is equivalent to the Project. However according to China's regulations, construction of fuel-fired power plants with the installed unit capacity lower than 135 MW is prohibited in the areas, which can be covered by large grids such as provincial grids. Considering this conflict with China's current regulations Alternative 1 is thus not feasible.

Alternative-2 satisfies China's regulations.

For Alternative-4, considering the power regulations in China import the equivalent power from China Northeast Power Grid for both the existing power plants and the power plants to be built in a foreseeable future is legal and also commercially feasible.

Therefore Alternative-2 and Alternative-4 are screened out as the



potential baseline alternatives for further analysis in Step 2.

Step 2. Investment Analysis

The purpose of this step is to determine whether the Project is economically or financially less attractive than Alternative-4 without an additional revenue/funding, possibly from the sale of certified emission reductions (CERs). The investment analysis was conducted in the following steps:

Sub-step 2a. Determine appropriate analysis method

Simple cost analysis and investment comparison analysis method are not considered to be appropriate since the Project will earn revenues not only from the CERs sales but also from electricity sales. Therefore, benchmark analysis method (Option III) selected is the only applicable to assess the financial viability of the Project.

Sub-step 2b. Benchmark Analysis Method (Option III)

It is verified that the financial benchmark of 8% (after tax) for the Project IRR according to the *Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects* [\[9\]](#) is properly applied to the Project. On the basis of this benchmark, calculation and comparison of financial indicators are carried out in sub-step 2c.

Sub-step 2c. Calculation and comparison of financial indicators

Basic parameters for calculation of financial indicators were indicated in PDD and have been verified as per FSR of the Project by crosschecking with the actual market pricing in Heilongjiang Province. [\[10\]](#)

Based on the data above, without CERs sales revenues, the Project IRR of the Project is 6.70% below the benchmark (8%). The Project is not proved financially attractive and hence passes the Step 2.

Validation team has ensured that the benchmark (Project IRR 8%) prevailed in China has been considered correctly. The IRR processing [\[13\]](#) is appropriate in line with the “*Guidance on the Assessment of Investment Analysis*” –Version 02 dated 02/08/2008 (EB 41). The organization that carried out the FSR is an accredited independent third party approved by the local government and holds top grade in power sector of the host country (The Certification Code–Gong Zi Jia 2030811001). [\[5\]](#)

Sub-step 2d. Sensitivity analysis



For the project, following financial parameters were taken as uncertain factors for sensitive analysis of financial attractiveness:

- Total investment
- Annual O&M cost
- Annual electricity output
- Feed-in-tariff

The sensitivity was conducted over a range of $\pm 10\%$ for above four parameters as per the same approach used in the approved FSR.

By checking the IRR spreadsheet validation team has found the results of sensitive analysis of four indicators of the Project are correctly presented in the PDD.

Considering the characteristics of wind power project, the annual O&M cost can be regarded as a relative insensitive one among the four indicators.

Considering the pricing of building materials has been increasing in China in recent years, the total investment is unlikely to be decreased above 10%./21/

| In China, the feed-in-tariff is set exclusively by the government. Once the tariff is decided, it will be fixed for a quite long time. Moreover, the feed-in-tariff endorsed to several operative wind farms in Heilongjiang Province have been checked and found that the trend of pricing is actually downward in recent 5 years./7/ Hence, the feed-in-tariff of the Project increases over 10% is unlikely in the foreseeable future.

The data of electricity output is based on above 30 years weather statistic records. The continuous increase of the wind resources by above 8% is not expectable as per that analysis of the approved FSR.

Therefore the sensitivity range for variation of all above parameters is considered to be reliable. Based on the Investment Analysis above, validation team is able to verify that the Project is proved to be convincingly financially un-attractive without consideration of incentives from CDM, so Alternative-2, the Project without incentive from CDM is not financially or economically feasible and hence it is not the baseline scenario.

It is concluded, that the practical and feasible baseline scenario is Alternative-4, the provision of equivalent amount of annual electricity supply by the grid (China Northeast Power Grid (NEPG)) into which the Project is connected.



Step 3 was not employed since the investment analysis has been demonstrated.

Step 4. Common practice analysis

Sub-step 4a. Analyze other activities similar to the project activity:

The Project is a newly built 18 MW wind farm in Heilongjiang Province, therefore, activities similar to the Project should be wind farm located in Heilongjiang Province, and with an installed capacity comparable to the Project built after 2002. There are two similar activities viz. “Mulan Menggushan” and “Fujin Phase I” were identified properly as listed in Table B-4 of the PDD. The relevant data source has been verified against the web links listed in the PDD and found to be reliable.

Sub-step 4b. Discuss any similar options that are occurring:

The two wind farms were founded by international low interest loan and endorsed a quite higher tariff viz. 0.70 RMB/kWh and 0.77 RMB/kWh by local authority respectively. However such a high tariff is impossible to be endorsed to the wind farm developers afterwards. [/17/](#) An essential distinctive between above two wind farms and the Project can thus be found, therefore, it is concluded that the Project is not common practice in the area.

Considering of the CERs sales revenues (calculated with EURO 9/tCO₂e, 7 yrs×3 crediting period), the IRR of total investment of the Project will be significantly improved to reach benchmark, from 6.70% to 9.81%.

Validation team has ensured that the IRR benchmark prevailed in China has been considered correctly. The Project IRR of the Project is lower than the benchmark without CDM income. The data source and method used for financial analysis is transparent and reliable. The variations $\pm 10\%$ performed for sensitivity analysis with the relevant justifications is deemed to be reasonable for the China’s power sector. As a consequence, the conclusion has been verified to be robust.

3.3 Calculation of GHG Emissions

The consolidated methodology ACM0002 version 06 is applied in the context of the Project in the following three steps:

- Calculate the baseline emissions;
- Calculate the project leakage;



- Calculate the emission reductions.

As per consolidated baseline methodology ACM0002 Version 06, the baseline emission sources considered are the emission reduction ERY during the crediting period is the difference between baseline emissions, project emissions and emissions due to leakage. These are

- 1) Baseline emissions: baseline emissions (BE_y in tCO₂) are the product of the baseline emissions factor (EF_y in tCO₂/MWh) times the electricity supplied by the project activity to the grid (EG_y in MWh).
- 2) Leakage: no leakage has to be considered for the proposed project activity since no energy generating equipment is transferred from or to the site.
- 3) Emission reduction: ERY= BE_y- PE_y- LE_y= BE_y.

The Project emissions is considered zero (PE_y=0) for a renewable energy project.

For the calculation of the OM emission factor, the simple OM emission factor calculation method is selected because low cost must run projects constitute less than 50% of the total grid generation and data is not available for applying the dispatch data analysis.

The detailed algorithms are described under section B.6 of the PDD.

It is indicated that there exists no net electricity imports from a connected electricity system to the project electricity system, hence no electricity imports has been considered in the Project.

The data on electricity generation and auxiliary electricity consumption are obtained from the China Electric Power Yearbook from 2003 to 2005 (published annually). The data on different fuel consumptions for power generation and the net caloric values of the fuels are obtained from the *Notification on Determining Baseline Emission Factor of China's Grid*.^[20] The emission factors and oxidation factors of the fuels adopted are obtained from Table 1-2 and Table 1-4 of the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Workbook.

With reference to the *Notification on Determining Baseline Emission Factor of China's Grid*, the Simple OM emission factor () of the Northeast China Power Grid is calculated as 1.2402 tCO₂e/MWh and the build margin emission factor is calculated ex ante as 0.8631 tCO₂e/MWh (see Annex 3 for details).

The weights ω_{OM} and ω_{BM} are selected as 0.75 and 0.25, respectively, as stipulated for wind project by ACM0002 (Version 06). Therefore the combined baseline emission factor = $0.75 \times 1.2402 + 0.25 \times 0.8631 = 1.1459$ (tCO₂e/MWh).



As required under methodology ACM0002 version 06, the estimated annual average of approximately 46,657 tCO₂e over the crediting period of emission reduction represents a reasonable estimation using the assumptions given by the project.

3.4 Monitoring Plan

The Project uses the approved consolidated monitoring methodology (ACM0002, Version06). Refer discussions on the validity of the methodology at section 3.2 above.

The adopted monitoring methodology has been chosen based on the following reasons:

Applicability of this methodology is justified in PDD as it involves grid connected renewable power generation using wind energy. Refer discussions on the validity of the methodology at Section 3.2 above.

The combined margin emission factor is determined ex-ante based on the most recent information available. Accordingly the monitoring plan includes electricity generated and sold to grid. Data may be verified against the sales receipt from the grid.

Leakage accounting is not required for the project as indicated in ACM 0002 Version 06.

Operational management for the project activity is comprehensively detailed in PDD and this includes descriptions of the responsibility, procedures of calibration of metering system, procedures of acquisition, process and management of monitoring data etc.

Realizing the specific power connection system of the Project that one revenue meter shared by two wind farms, an alternative referred to the approved revision to the monitoring plan of the registered CDM projects viz. Saihanba East (UNFCCC No.0561), Saihanba North (UNFCCC No.0576) and Saihanba West wind farm project (UNFCCC No.0994) in China /22/ has been applied for the Project. According to the alternative the all meters of the two wind farms which are installed in the 10KV end of the 10-66KV transformer in the project site are required to be monitored and the net electricity supplied to the grid will be determined in terms of the weight of the electricity generation of each wind farm measured at 10KV end of the transformer.

DOE is of the opinion that the retrievability of relevant CDM project activity records is pro-actively considered satisfactorily.

Monitoring of sustainable development indicators is not required for such



projects in China in the light of minor environmental impacts.

3.5 Sustainable Development Impacts

DOE has ensured that the Environmental Impact Assessment was carried out by Jiamusi Institute of Environment Research on 14/09/2005, and approved by the Environment Protection Bureau of Helongjiang Province on 28/09/2005. (Document No. Hei Huan Jian Shen [2005]91) [/8/](#)

The environmental impacts arising from the Project are analysed in the two phases i.e. Construction & Operations:

Environmental impacts evident in Construction Phase includes land use, Noise, Dust and exhaust gas, waste water and soil waste caused by excavation and reclamation of the construction. There are no environmental impacts that are significant and permanent. After the project completion, the land in the project management site and temporary construction site will be restored and rehabilitated with the trees and vegetation.

Operational Phase environmental impacts include noise, sanitary wastewater and impact on wild animals.

The construction of the Project is assessed a very little impact on the migration route of birds lived surrounding the project site. Arrangement for treatment of wastewater is made and the provision for the same is evident.

It is opinion of the DOE that Project will not have significant impacts on the environment.

3.6 Comments by Local Stakeholders

The project owner conducted a survey on the local residents possibly affected by the Project on 16/12/2006. The survey was conducted through distributing questionnaires and collecting responses from the local villages. During the process, the announcement on introducing the project and survey was broadcasted in the nearest village. Totally 30 surveys were distributed to the villagers then collected back with 100% response rate. [/16/](#)



This survey shows that all people agree the Project actively decrease environment pollution and increase employment opportunities. In addition, the construction of this Project will renovate the local grid system, promote development of other industries. All the stakeholders support the Project. No negative comments received.

The local stakeholders interviewed during the site visit of the validation activity confirmed these views. The project participants maintain the list of participants, record of the stakeholder meeting proceedings.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

According to the modalities for the Validation of CDM projects, the DOE shall make publicly available the project design document and receive, within 30 days, comments from Parties, stakeholders and UNFCCC accredited non-governmental organizations and make them publicly available.

Bureau Veritas Certification published the project documents on the UNFCCC CDM website (<http://cdm.unfccc.int>) on 06/12/2007 and invited comments within 04/01/2008 by Parties, stakeholders and non-governmental organizations.

No comments were received from any persons.

5 VALIDATION OPINION

Bureau Veritas Certification has performed a validation of Heilongjiang Fujin Phase II 18MW Wind Power Project in P.R.China. The validation was performed on the basis of UNFCCC criteria and host country criteria and also on the criteria given to provide for consistent project operations, monitoring and reporting.

The validation consisted of the following three phases: i) a desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

Project participants used the latest tools for demonstration of the additionality. In line with this tool, the PDD provides analysis of investment, technological to determine that the project activity itself is not the baseline scenario.



By synthetic description of the Project, the project is likely to result in reductions of GHG emissions partially. An analysis of the investment demonstrates that the proposed project activity is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity. Given that the project is implemented and maintained as designed, the project is likely to achieve the estimated amount of emission reductions.

The review of the Project Design Documentation (version 3) dated 11 Aug. 2008 and the subsequent follow-up interviews have provided Bureau Veritas Certification with sufficient evidence to determine the fulfillment of stated criteria. In our opinion, the project correctly applies and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

The validation is based on the information made available to us and the engagement conditions detailed in this report.

6 REFERENCES

Category 1 Documents:

Documents provided by Type the name of the company that relate directly to the GHG components of the project.

- /1/ PDD Version 1 dated 10/07/2007
- /2/ PDD Version 3 dated 11/08/2008
- /3/ Letter of Approval from DNA of Host country dated 17/12/2007
- /4/ Letter of Approval from DNA of United Kingdom dated 05/06/2008
- /5/ Feasible Study Report (FSR) carried out by Heilongjiang Electric Power Design Institute in Nov.2006 and soon approved by Heilongjiang Development and Reform Commission on 30/11/2006 (Document No. HEIFAGAINENGYUAN [2006]1080)
- /6/ The Adjustment of feed-in tariff in Northeast China Grid by Nation Development and Reform Commission (NDRC)
http://www.ndrc.gov.cn/zcfb/zcfbtz/tz2006/t20060630_75078.htm
The pricing principle for renewable energy generation viz.
Price thermal +0.25 RMB/kWh=Price renewable
http://www.gov.cn/ztl/2006-01/20/content_165910.htm
- /7/ The Feed-in tariff is tending to go down.
<http://www.eri.org.cn/manage/upload/uploadimages/eri200672795944.pdf>
- /8/ EIA report and its approval letter dated 28/09/2005. (Document No. HEI Huan Jian



Shen [2005] 91)

- /9/ Evidence of Board Meeting Minute on decision of CDM application dated 15/12/2006
- /10/ Data source of Benchmark (Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects)
- /11/ Agreement of consulting service signed with the consultant on 18/12/2006
- /12/ Approval Letter of Feed-in-Tariff of the Project endorsed by NDRC dated 23/07/2008.
- /13/ IRR spreadsheet
- /14/ Baseline Emission Factor calculation spreadsheet
- /15/ Power Purchase Agreement (PPA) dated July 2008
- /16/ Evidence of Stakeholders' comments: 30 pieces of survey questionnaires.
- /17/ Project information of Fujin Phase I Project and Mulan Menggushan Project
<http://fujin.mofcom.gov.cn/aarticle/dongtai/200508/20050800238518.html>
<http://www.chinapower.com.cn/newsarticle/1005/new1005504.asp>
- /18/ Purchase contract of wind turbines signed with Sinovel on 18/04/2007
- /19/ Construction Permit dated 13/06/2007
- /20/ Notification on Determining Baseline Emission Factor of China's Grid
<http://cdm.ccchina.gov.cn/web/NewsInfo.asp?NewsId=2193>
- /21/ The data source of increasing pricing of raw material in China
<http://www.shdrc.gov.cn/subdetail.jsp?id=7217&file=sub.jsp&hyhyhy=6-2&okokok>
- /22/ Approved revision to monitoring methodology
<http://cdm.unfccc.int/Projects/DB/DNV-CUK1155680126.47/view> (0561)
<http://cdm.unfccc.int/Projects/DB/DNV-CUK1156508358.88/view> (0576)
<http://cdm.unfccc.int/Projects/DB/DNV-CUK1173680185.45/view> (0994)
- /23/ Intend Letter sign with buyer Shell (UK) on 26/02/2007.
- /24/ Feed-in tariff information of the nearby wind farms in Heilongjiang Province which had been commenced by the end of 2007.
 1. Heilongjiang Daqingshan wind farm Commenced in 2006 (UNFCCC No.0829) with bus-bar tariff 0.72 (Incl.VAT)
<http://cdm.unfccc.int/UserManagement/FileStorage/S6R3W9D46EXVOTQ84WWVYUAQU99NH5>
 2. Heilongjiang Mudanjiang Daimagou Wind Farm Project commenced in 2007 with bus-bar tariff 0.61 (Incl.VAT).
<http://www.mdjprojects.gov.cn/ArticleContent.asp?ID=1143>
 3. Heilongjiang Wuerguli 30MW Wind Power Project (UNFCCC No.1209) commenced in 2007 with bus-bar tariff 0.61 (Incl.VAT).
<http://cdm.unfccc.int/Projects/DB/BVQI1182384587.37/view>
- /25/ The Project was submitted to DNA of the host country in August 2007 and examined on 04/09/2007.
<http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1384.pdf>



Category 2 Documents:

Background documents related to the design and/or methodologies employed in the design or other reference documents.

- /1/ ACM 0002 -Version 06 dated 19/05/2006
- /2/ Tool for demonstration and assessment of additionality -Version 04 dated 30/11/2007
- /3/ Paragraph 54 of Meeting Report of EB 38th dated 14/03/2008.
- /4/ Guidance on the Assessment of Investment Analysis- Version 02 dated 16/05/2008 (EB 41 Annex 45)
- /5/ Guidance on the Demonstration and Assessment of Prior Consideration of the CDM -dated 02/08/2008 (EB41 Annex 46)
- /6/ CDM Glossary -Version 03

Persons interviewed:

List persons interviewed during the validation or persons that contributed with other information that are not included in the documents listed above.

- /1/ Mr. Hou Xinmin Assistant General Manager of Heilongjiang Huafu Wind Power Fujin Co., Ltd.
- /2/ Ms. Zhao Yu CDM Project Manager of Heilongjiang Huafu Wind Power Fujin Co., Ltd.
- /3/ Mr. Zhang Jiaming CDM Project Manager of Heilongjiang Huafu Wind Power Fujin Co., Ltd.
- /4/ Ms. Yang Lusi Consultant of Beijing Ruichi Electric Power Information Technology Co. Ltd.
- /5/ Ms. Wang Ziyuan CDM Project Manager of Shell Trading International Ltd.(UK)

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APPENDIX A: COMPANY CDM PROJECT VALIDATION PROTOCOL

Table 1 Mandatory Requirements for Clean Development Mechanism (CDM) Project Activities

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
1. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3	Kyoto Protocol Art.12.2	OK	Table 2, Section A.2.2
2. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof	Kyoto Protocol Art. 12.2, Marrakesh Accords, CDM Modalities §40a	OK	Table 2, Section A.3 Host country Letter of Approval from DNA of Host country dated 17/12/2007
3. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC	Kyoto Protocol Art.12.2.	OK	Table 2, Section B.6.4
4. The project shall have the written approval of voluntary participation from the designated national authorities of each party involved, including confirmation by the host party that the project activity assists it in achieving sustainable development	Kyoto Protocol Art. 12.5a, Marrakesh Accords, CDM Modalities §40a, §28	OK	Table 2, Section A.3.2. LoA dated 05/06/2008 from DNA of United Kingdom has been received.
5. The emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change	Kyoto Protocol Art. 12.5b	OK	Table 2, Section B.6
6. Reduction in GHG emissions shall be additional to any that would occur in absence of the project activity, i.e. a CDM	Kyoto Protocol Art. 12.5c,	OK	Table 2, Section B.5

VALIDATION REPORT

REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity	Marrakesh Accords, CDM Modalities §43 and 44		Assessed by DOE and transparently addressed in the validation report
7. Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance	Marrakech Accords	Yes, no public funding	Table 2, A.5.5 Validation did not reveal any information that indicates that project can be seen as diversion of ODA funding towards China
8. Parties participating in the CDM shall designate a national authority for the CDM	Marrakech Accords, CDM Modalities §29	OK	DNA of China is National Development and Reform Commission (NDRC)
9. The host country shall be a Party to the Kyoto Protocol	Marrakech Accords, CDM Modalities §30	OK	Table 2, A.4.2. China ratified the Kyoto Protocol on 30 th August 2002
10. Comments by local stakeholders shall be invited, a summary of these provided and how due account was taken of any comments received	Marrakech Accords, CDM Modalities §37b	OK	Table 2, Section E
11. Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required	Marrakech Accords, CDM Modalities §37c	OK	Table 2, Section D

VALIDATION REPORT



REQUIREMENT	REFERENCE	CONCLUSION	Cross Reference / Comment
by the Host Party shall be carried out.			
12. Baseline and monitoring methodology shall be previously approved by the CDM Methodology Panel	Marrakech Accords, CDM Modalities §37e	OK	Table 2, Section B.1.2. and B.7.
13. Provisions for monitoring, verification and reporting shall be in accordance with the modalities described in the Marrakech Accords and relevant decisions of the COP/MOP	Marrakech Accords, CDM Modalities §37f	OK	Table 2, Section B.7.
14. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days, and the project design document and comments have been made publicly available	Marrakech Accords, CDM Modalities, §40	OK	PDD was web hosted on UNFCCC website for 30days from 06/12/07 to 04/01/08
15. A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances	Marrakech Accords, CDM Modalities, §45 b, c, e	OK	Table 2, Section B.4.
16. The baseline methodology shall exclude to earn CERs for decreases in activity levels outside the project activity or due to force majeure	Marrakech Accords, CDM Modalities, §47	OK	Table 2, Section B.5.
17. The project design document shall be in conformance with the UNFCCC CDM-PDD format and fulfilled according to the guidelines for completing CDM-PDD, CDM-NMB, and CDM-NMM	Marrakech Accords, CDM Modalities, Appendix B, EB Decisions	OK	PDD format is in line with current of PDD Template version 03.1.

Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A. General Description of Project Activity <i>The project design is assessed.</i>					
A.1.1. Title of the project activity, version number and date of the document	1	DR	Heilongjiang Fujin Phase II 18MW Wind Power Project PDD (GSP) version 01 Date:10/07/2007 Final version:03 Date 11/ 08/ 2008	OK	OK
A.2. Description of the project activity					
A.2.1. Is the purpose of the project activity included?	1	DR	The objective of the Project is to utilize the wind power for generating electricity which will be sold into the Northeast China Power Grid (NEPG).	OK	OK
A.2.2. Is the view of the project participants on the contribution of the project activity to sustainable development included?	1	DR	The contribution to sustainable development is included in Section A.2 of the PDD. <ul style="list-style-type: none"> ● To reduce 46,657 tCO₂ equivalent GHG emissions for the 7x3 years renewable crediting period; ● To help to stimulate the growth of wind power industry in China; ● To reduce pollutants resulting from the power generation in China, compared to a business-as-usual scenario; 	OK	OK



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			<ul style="list-style-type: none"> To create local employment opportunities during the project construction and operation; To increase the tax income for local government. <p>Please provide the spreadsheet which presents the calculation process from installed capacity (18MW) up to final estimated annual emission reductions.</p> <p>The other evidences of contribution made by the project are required.</p>		
A.3. Contribution to Sustainable Development					
A.3.1. Is the project in line with relevant legislation and plans in the host country?	-	DR I	<p>The project category is generally allowed in the country.</p> <p>Please present the FSR and related approval issued by Provincial Development & Reform Commission.</p>	CL-3	OK
A.3.2. Is the project in line with host-country specific CDM requirements?	-	DR I	Yes. China is listed as host country. No Letter of Approval has been provided yet.	CAR1	OK
A.3.3. Is the project in line with sustainable development policies of the host country?	-	DR I	<p>Yes. Refer to A2.2.</p> <p>Please present the EIA and related approval issued by local EPA.</p>	CL-4	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.3.4. Will the project create other environmental or social benefits than GHG emission reductions?	-	DR I	The project is reported to lead to sustainable development. Refer A.2.2. Pending close CL 2. and on-site assessment.	Pending	OK
A.4. Project participants					
A.4.1. Are Party(ies) and private and/or public entities involved in the project activity listed?	1	DR	The private entities involved in the project activity are listed at section A.3 of the PDD. These are: Heilongjiang Huafu Wind Power Fujin Co. Ltd (Host) Shell Trading International Ltd. (UK Annex I) The LoA from DNA of UK is required.	CAR-2	OK
A.4.2. All Parties listed have ratified the Kyoto protocol and are allowed to participate in CDM projects?			P. R. China has ratified the Kyoto Protocol on 30 August 2002, refer to http://maindb.unfccc.int/public/country.pl?country=CN UK has ratified the Kyoto Protocol on 31 May 2002, refer to http://maindb.unfccc.int/public/country.pl?country=GB	OK	OK
A.4.3. Is the contact information provided in annex 1 of the PDD?	1	DR	Yes.	OK	OK
A.4.4. Is this information indicated using the tabular format?	1	DR	Yes.	OK	OK



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.5. Technical description of the project activity					
A.5.1. Location of the project activity					
A.5.1.1. Host country Party(ies)	1	DR	People's Republic of China.	OK	OK
A.5.1.2. Region/State/Province etc.	1	DR	Heilongjiangn Province	OK	OK
A.5.1.3. City/Town/Community etc.	1	DR	Bielayinshan, Fujin City	OK	OK
A.5.1.4. Detailed description of the physical location, including information allowing the unique identification of this project activity.	1	DR	The Project is sited in the Bielayinshan, 32 km southwest to Fujian City of Heilongjiang province, P.R. China. Its geographical coordinates with east longitude 131°40' and north latitude of 47°04". The detailed extension of its geographical coordinates has been verified against FSR and found to be consistent.	OK	OK
A.5.2. Category of the project activity					
A.5.2.1. Is the category of the project activity specified?	1	DR	Scope 1: energy industries	OK	OK
A.5.2.2. Is it justified how the proposed project activity conforms to the project category selected?	-	DR	The project activity involves wind power generation which is a renewable energy source. The project activity therefore conforms to the selected project category.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.6. Technology to be employed					
A.6.1. Does the project design engineering reflect current good practices?	-	DR I	Yes. The specifications and origin are described in A.4.3. of PDD. The technology is introduces from Germany and reflecting current good practice in the host country.	OK	OK
A.6.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	-	DR I	Refer above A.5.3.1.	OK	OK
A.6.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	-	DR I	As the Feasibility Study Report described, the project is expected to run for 20 years. It is not likely that the project technology will be replaced within this project time.	OK	OK
A.6.4. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	-	DR I	Yes. Before the start of any wind power project, a certain extensive training to the staff is required.	OK	OK
A.6.5. Does the project make provisions for meeting training and maintenance needs?	-	DR I	Yes.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
A.7. Estimated amount of emission reductions over the chosen crediting period.					
A.7.1. Is the estimate of total anticipated reductions of tons of CO ₂ equivalent provided?	1	DR	Yes. The project chooses 3x7years renewable crediting period, the emission reductions over the first 7 years crediting period are estimated as 326,599 tonnes of CO ₂ e.	OK	OK
A.7.2. Is this information indicated using the tabular format?	1	DR	Yes. The information on emissions reductions is indicated using the tabular format. Refer to A.4.4 of PDD.	OK	OK
A.8. Public funding of the project activity					
A.8.1. Is it indicated whether public funding from Parties included in Annex I is involved in the proposed project activity?	1	DR	The project has not received any public funding from Parties included in Annex I. Refer A.4.5. of PDD. Pending check the approved FSR	Pending	OK
A.8.2. If public funding is involved, is information on sources of public funding for the project activity provided in Annex 2, including an affirmation that such funding does not result on a diversion of official development assistance and is separate from and is not counted towards the financial obligations of those Parties?	1	DR	Not applicable.		

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B. Project Baseline					
B.1. Baseline Methodology					
B.1.1. Are the title and the reference of the baseline methodology applicable to the project activity defined?	1 UNFCCC web site	DR I	Yes. "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" ACM0002 Version 06 dated 19 May 2006. The date submitted PDD to BVC for validation is in November 2007 which is prior to the effective date of Version 07 viz. 14 Dec 2007. So the Version 06 can therefore be used in this case.	OK	OK
B.1.2. Is the baseline methodology previously approved by the CDM Methodology Panel?	1	DR	Yes. Refer B.1.1.	OK	OK
B.1.3 Does the proposed project activity meet the applicability conditions of the methodology?	1	DR	Yes. This methodology applies to project activities that generate electricity from renewable energy sources. The applicability has been properly elaborated in Section B.2. of PDD.	OK	OK
B.2. Description of how the methodology is applied in the context of the project activity					
B.2.1. Is the baseline methodology the one deemed most applicable for this project and is the appropriateness justified?	1	DR	Yes. The baseline methodology is applicable to grid-connected renewable power generation project activities including capacity additions from renewable energy sources. Refer B.1.3.	OK	OK



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.3. Description of the project boundary for the project activity					
B.3.1. Are the project's spatial (geographical) boundaries clearly defined?	1	DR	Yes. In Section B3. the Project boundary is clearly identified that includes the physical, geographical site of the project activity and all the plants connected physically to the Northeast China Power Grid (NEPG) where the Project is connected to.	OK	OK
B.3.2. Are the project's system (components and facilities used to mitigate GHGs) boundaries clearly defined?	1	DR	No. The wind turbines of the project are described in Section A.4.3 of PDD but other facilities are not mentioned. The detailed description of physical component (incl. turbines, control room, 10-66 KV transformer, 66 KV transmission lines) is in A.4.3. and found no project emissions need to be considered which is in line with ACM0002.	CL-5	OK
B.4. Description of how the baseline scenario is identified and description of the identified baseline scenario					
B.4.1. Does the PDD explain how most plausible baseline scenario is identified?	1	DR	The plausible and credible alternatives have been identified as per ACM0002 Version 06. The data sources (footer 1 and 2) quoted in	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			Section B4 of PDD to demonstrate Scenario 1 and 3 have been verified and found is not the feasible baseline scenario of the Project .		
B.5. Description of how the anthropogenic GHG emissions by sources are reduced below those that would have occurred in the absence of the proposed project activity					
B.5.1. Is the proposed project activity additional?	1	DR	<p>Tool for the demonstration and assessment of additionality” Version 03 is applied in the initial PDD (GSP version). While the latest Version 04 issued on 30/11/2007 is supposed to be used. In addition, the latest version of <u>“Guidance on the Assessment of Investment Analysis”- Version 02 dated 6/05/2008 (EB 41 Annex 45) and, <u>“Guidance on the Demonstration and Assessment of Prior Consideration of the CDM -dated 02/08/2008 (EB 41 Annex 46)</u></u></p> <p>The objective evidences that early consideration of the incentives from CDM were taken into consideration seriously are required to be presented and whether CERs sales revenue forms the basis of investment decisions made by the project proponent prior to the implementation of the Project needs to be further elaborated with</p>	<p>CAR-3</p> <p>CL-6</p>	<p>OK</p> <p>OK</p>

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			a clear time line.		
			Please provide spreadsheet for the IRR of total investment.	CL-7	OK
			A copy of "Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects" thereof 8% adopted as the benchmark for wind power project is required to be presented.	CL-8	OK
			The objective evidence to show that the feed-in-tariff 0.6067 RMB/kWh (incl. VAT) likely to be endorsed to the Project is required to be presented.	CL-9	OK
			The reason of choosing variation range as -10% to +10% and whether the financial indicators will beyond the range need to be clarified further.	CL-10	OK
			The essential distinctions between the Project and existing similar projects are not identified clearly in Sub-step 4b. of Section B.5 of PDD.	CL-11	OK
B.5.2. Are national policies and circumstances relevant to the baseline of the Project activity summarised?	-	I	Policies and circumstances relevant to proposed project activity have been discussed in Section B4 and Step 1 of Section B5 of PDD.	OK	OK
B.5.3. In the case where the investment			All parameters in PDD have been checked		

VALIDATION REPORT



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
decision made by the project proponent was repying on the value from the approved FSR, does the input value meet the requirement of 54 paragraph (a. b. c.) EB 38th meeting report?			against the approved FSR and found they are fully consistent with each other except a difference in feed-in tariff. The feed-in tariff estimated in the FSR was much higher than that in the PDD, which resulted in a satisfactory Project IRR up to 8.85%. The difference needs to be clarified with evidences.	CL-11	OK
a. Is the period of time between the finalization of the FSR and the investment decision sufficiently short and the input value in the PDD was unlikely materially changed in the context of the underlying project activity.			The FSR was carried out by a qualified third party - Heilongjiang Electric Power Design Institute in Nov.2006 and soon approved by Heilongjiang Development and Reform Commission on 30/11/2006 (Doc. No. HEIFAGAINENGYUAN [2006]1080) The time interval to the date of investment decision made by PP to be verified against the conclusion of above CL-6. How did the tariff impact the decision of the PP needs to be elaborated clearly.	CL-12	OK
b. Are the values used in the PDD and IRR calculation are fully consistent with the FSR or are the values appropriate where inconsistencies occur?			The data input in the PDD and IRR calculation sheet are fully derived from the FSR except the value of feed-in tariff. Pending close above CL-11.	Pending	OK
c. Are the input values from the FSR valid and applicable at the time of the investment			The endorsed feed-in tariff for the Project issued by local authority afterwards is required to be	CL-13	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
decision on the basis of its specific local and sectoral expertise, confirmation is provided, by cross-checking or other appropriate manner			presented as a supporting evidence to crosscheck with the early estimation in addition to relevant pricing regulations from the national government i.e.NDRC.		
B.6. Emission Reductions					
B.6.1. Explanation of methodological choices					
B.6.1.1. Are all relevant methodological choices / scenarios explained?	-	DR I	<p>The web links of “Notification on Determining Baseline Emission Factor of China Grid” is not quoted in Step1. of Section B.6.1. of PDD.</p> <p>The “net electricity import” from a connected electricity system to the Northeast China Power Grid is not justified.</p> <p>A difference in determining BM between the result in the PDD (0.8585) and Notification published by DNA of China viz. 0.8631.</p>	<p>GL-14</p> <p>CAR-4</p> <p>CAR-5</p>	<p>OK</p> <p>OK</p> <p>OK</p>
B.6.1.2. Are various emissions like project emissions, Baseline emissions and Leakages considered for calculations?	-	DR I	Baseline emissions are clearly calculated. Project emissions and Leakages are not need to be considered for Wind Power generation projects according to ACM0002 the project applied.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.6.2. Data and parameters that are available at validation.					
B.6.2.1. Are all data or parameters; the chosen value or, where relevant, the qualitative information, using the table provided?	-	DR	Yes. The data sources of all parameters used for calculating the emissions as per the ACM0002 V6 are available on published China Power/ Energy Yearbook and website of China DNA or IPCC 2006.	OK	OK
B.6.3. Ex-ante calculations of emission reductions.					
B.6.3.1. Are all aspects related to direct and indirect GHG emissions, including leakage, captured in the project design?	-	DR	Yes. All parameters used for calculating the emissions as per the ACM0002 V6 have been presented in B.6.2 of PDD and verified.	OK	OK
B.6.3.2. Are the GHG calculations documented in a complete and transparent manner?	-	DR	The calculation process of Emission Factor of NEPG has been provided in Annex 3 of PDD and verified is completely whereas the calculation process of estimated electricity supplied to NEPG is not presented. Refer above CL-1.	OK	OK
B.6.3.3. Have conservative assumptions been used to calculate project GHG emissions?	-	DR	The calculation of Emission Factor is considered as a conservative manner. For the net electricity supplied to NEPG a calculation process needs to be presented and verified. Refer above CL-1.	OK	OK
B.6.3.4. Have all relevant greenhouse	-	DR	Yes. The relevant emission sources have been	OK	OK



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
gases and source categories listed in Kyoto Protocol Annex A been evaluated?			evaluated in Section B.3.of PDD and only emissions from CO2 need to be determined according to the ACM0002 Version 06.		
B.6.3.5. Are uncertainties of external data sources for emissions reduction estimated?	-	DR	Yes. According to ACM0002 Version 06 default values of IPCC 2006 are considered as conservative and can thus be used to calculation if local statistics are not available.	OK	OK
B.6.3.6. Are potential leakage effects beyond the chosen project boundaries properly identified?	-	DR	Not applicable		
B.6.4. Summary of the ex-ante calculations of emission reductions.					
B.6.4.1. Are the reductions of emissions of the project captured as per the tabular form?	-	DR	Yes. See Section B.6.4 of the PDD	OK	OK
B.7. Application of the monitoring methodology and description of Monitoring Plan					
B.7.1. Is the monitoring methodology previously approved by the CDM Methodology Panel?	1	DR	Yes. Monitoring methodology ACM0002 version 06 was approved on 19 May 2006 while version 07 was in force from 14 Dec. 2007 after PDD being web hosted.	OK	OK
B.7.2. Is the monitoring methodology	1	DR	Yes. Refer B.1.3.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.7.3. applicable for this project and is the appropriateness justified?					
B.7.4. Does the monitoring methodology reflect good monitoring and reporting practices?	-	DR	Yes.	OK	OK
B.7.5. Is the discussion and selection of the monitoring methodology transparent?	-	DR	The power connection system of the project site is not described correctly as per the actual situation as per the signed PPA.	CAR-6	OK
			The description of definition of the meters used for determining the electricity supplied to the grid is not clearly.	CAR-7	OK
B.7.6. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	-	DR	The procedure of "Internal Audit" for conducting QA/QC before DOE's verification is not described.	GL-15	OK
B.7.7. Are the choices of project GHG indicators reasonable?	-	DR	Yes. The choices of project GHG indicators are in compliance with ACM0002 version 06.	OK	OK
B.7.8. Will it be possible to monitor / measure the specified project GHG indicators?	-	DR	Yes. With accuracy uncertainty less than $\pm 0.5\%$ the metering equipment is possible to monitor the electricity delivered by the proposed project as per the signed PPA.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
B.7.9. Will the indicators give opportunity for real measurements of achieved emission reductions?	-	DR	As monitoring plan described, the main meter installed in grid side and backup meter installed in the wind farm while the procedure of monitoring the main meter and data transcription between two parties are not described. The monitoring frequency is not indicated clearly in PDD Section B7.1.	CL-16 CL-17	OK OK
B.7.10. Will the indicators enable comparison of project data and performance over time?	-	DR	Yes. As described in Section B.7.1 of PDD, all the data monitored will be archived according to the requirements in ACM0002 and can be tracked over time.	OK	OK
B.8. Monitoring Plan Details of the baseline and its development					
B.8.1. Is the date of completion provided?	1	DR	The date of completion of baseline study is indicated on 11/08/2008 as the revised PDD.	Pending	OK
B.8.2. Is contact information provided?	1	DR	Yes. The relevant contact information is provided.	OK	OK
B.8.3. Is the person/entity is also a project participant?	1	DR	No.	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
C. Duration of the Project activity / Crediting Period					
C.1. Is the project's starting date clearly defined ?	1	DR	Yes. The starting date of the project activity indicated as 01/01/2007. The documented evidence used for justifying the starting date as per the latest version of CDM glossary is required.	CL-18	OK
C.2. Is the project's operational lifetime clearly defined and reasonable?			Yes. 20 years. It is consistent with that stated in the approved FSR and found to be reasonable in the power sector.	OK	OK
C.3. Is the assumed crediting time clearly defined and reasonable (renewable crediting period of max. two x 7 years or fixed crediting period of max. 10 years)?	1	DR	Yes. 7 x 3 years renewable crediting period is selected for the project. The starting date of the crediting period estimated as 01/01/2008 which is impossible to be achieved.	CAR-8	OK
D. Environmental and Social Impacts					
D.1. Has an analysis of the environmental and social impacts of the project activity been sufficiently described?	PDD	I	Yes. Section D.1. of PDD describes the details of environmental impacts.	OK	OK
D.2. Are there any Host Party requirements for an Environmental Impact Assessment	-	I	Yes. The relevant approval from provincial EPA dated	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
(EIA), and if yes, is an EIA approved?			28 Oct.2005 has been presented.		
D.3. Will the project create any adverse environmental or social effects?	-	I	No. As the report elaborated, a few negative environmental impacts will be generated during the construction period and confined within a limited includes arable land use, noise, dust and waste etc. There is no emigration. The project owner has taken necessary measures to make these impacts to be insignificant.	OK	OK
D.4. Are transboundary environmental and social impacts considered in the analysis?	-	I	Yes. No trans-boundary environmental and social impacts identified in EIA.	OK	OK
D.5. Have identified environmental and social impacts been addressed in the project design?	-	I	No. Refer above D.1.4.	OK	OK
D.6. Does the project comply with environmental legislation in the host country?	-	I	Yes. The project has obtained the approval from provincial EPA in September, 2005.	OK	OK
E. Stakeholder Comments					
E.1. Have relevant stakeholders been consulted?	-	DR	Yes. The objective evidences of public survey to the local villagers are required to be presented. The project sited on top of the hill so no arable land occupation and emigration occurred. The	GL-18	OK

VALIDATION REPORT



CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
			required evidences including questionnaires and meeting memo have been verified and found there were not opposite opinions for the project construction.		
E.2. Have appropriate media been used to invite comments by local stakeholders?	-	DR	Through distributing questionnaires to the local residents.	OK	OK
E.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations /laws?	-	I	The consultation was carried out as part of the process of EIA, and the EIA has been approved by provincial EPA.	OK	OK
E.4. Is a summary of the stakeholder comments received provided?	-	DR	Yes, It is provided in E.2 of PDD, the copy of the record needs to be presented. Refer above CL-18	Pending	OK
E.5. Has due account been taken of any stakeholder comments received?	-	DR	No. As Section E.3. of PDD addressed, there is no need to modified the project due to the comments received. Pending on-site assessment.	OK	OK

Table 3 Baseline and Monitoring Methodologies: ACM 0002 version 06 dated 19 May 2006

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. Baseline Methodology					
1.1. Applicability					
1.1.1. Does the project activity generate electricity as defined the chosen methodology	3	DR I	Yes. The project activity generates electricity from renewable source.	OK	OK
1.1.2. Is the power connected to the grid?		DR I	Yes. The power generated by the project activity will be exported to the grid of NEPG.	OK	OK
1. 2. Project boundary					
1.2.1. Did the project participant account for the CO ₂ emission from electricity generation in fossil fuel fired power that is displaced due to project activity?	2,3	DR	Yes. The project participants have accounted only for the CO ₂ emissions from electricity generation in fossil fuel fired power that is displaced due to project activity.	OK	OK
1.2.2. Does the spatial extent of the project boundary include the power plant at project site and all power plants connected physically to the electricity system that the CDM project power plant is connected to?	2,3	DR	Yes. The geographic and system boundaries for the relevant electricity grid (NEPG) can be clearly identified and information on the characteristics of the grid is available.	OK	OK
1.2.3. Is the regional project electricity system identified by the spatial extent of the power plants that can be dispatched without significant transmission constraints?	2,3	DR	Yes. Identified as published data sources by DNA of China. http://cdm.ccchina.gov.cn/web/NewsInfo.asp?NewsId=2193	OK	OK
1.3. Identification of alternative baseline scenarios					
1.3.1. Does the project activities modify or retrofit an existing generation facility?	2	DR	No	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl I
1.3.2. If the answer is No then Is the baseline scenario the following: electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources?	2	DR	Yes	OK	OK
1.4. Additionality					
1.4.1. Was the additionality of the project activity demonstrated and assessed using the latest version of the "Tool for demonstration and assessment of additionality"?	2	DR	Refer to CAR-3.	Pending	OK
1.5. Project Emissions					
1.5.1. Are the project emissions considered as zero?	2	DR	Yes.	OK	OK
1.6. Baseline Emissions					
1.6.1. Are the baseline emissions determined according to the formula $BE_y = EG_y \times EF_{BL, CO_2, y}$?	3	DR	Yes.	OK	OK
1.7. Leakage					
1.7.1. Are the leakage considered?	3	DR	Yes. It's Zero as per ACM0002 version 06.	OK	OK
1.8. Emission Reduction	3				
1.8.1. Did the emissions reductions were determined according to the formula $ER_y = BE_y$?	3	DR	Equation in PDD uses the following formula for calculation of emission reductions properly. $ER_y = BE_y - PE_y - LE_y = BE_y$	OK	OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl I
1.8.2. Were all values chosen in a conservative manner and was the choice justified?	2	DR I	All values were chosen in a conservative manner and the choice was justified. Refer to above CAR-5.	Pending	OK
2. Monitoring Methodology					
2.1. Does the monitoring plan require monitoring of grid connected electricity generation from the proposed project activity?	2	DR I	Yes.	OK	OK
2.2. Did all measurements use calibrated measurement equipment that is regularly checked for their functioning?		DR I	Yes. A CDM team with specific management instructions including regularly checking for metering system have been established;	OK	OK
2.3. Are the data double-checked against commercial data?	2	I	Yes	OK	OK

Table 4 Legal Requirements

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl	Final Concl
1. Legal requirements					
1.1. Is the project activity environmentally licensed by the competent authority?	2	DR	Refer CL-4	Pending	OK
1.2. Are the conditions of the environmental license being met?	2	DR	Yes.	OK	OK
1.3. Are the conditions of the Designated National Authority being met?	2	DR	LoA both host country and Annex I country is required. Refer A.3.2 and A.4.1.	CAR 1 CAR 2	OK

TABLE 5 RESOLUTION OF CORRECTIVE ACTION AND CLARIFICATION REQUESTS

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3	Summary of project owner response	Validation team conclusion
CAR-1. Please provide LoA from China's DNA	Table 2. A.3.1	The letters of approval from China's DNA has been obtained on 17 Dec.2007.	Response to CAR-1 is satisfactory and the same is closed.
CAR-2. Please provide LoA from UK's DNA	Table 2. A.4.2	The letters of approval from UK's DNA has been obtained on 05 Jun.2008.	Response to CAR-2 is satisfactory and the same is closed.
CAR-3. The Tool for the demonstration and assessment of Additionality version 04 was in force from 30 Nov. 2007. The latest version is supposed to be pursued.	Table 1. B.5.1.	The Tool Version 04 has been applied in the updated PDD.	The latest version of the Tool is applied. CAR-3 is closed.
CAR-4. Please justify the "net electricity import" from a connected electricity system to the Northeast China Power Grid.	Table 2. B.6.1.	According to the grid data issued by the DNA of host country there is no net electricity import to the Northeast China Grid.	Response to CAR-4 is satisfactory and the same is closed.
CAR-5. For BM emission factor determination, a difference between Annex 3 and Notification issued by China DNA (0.8585 vs 0.8631). Please check the calculation.	Table 2. B.6.1.	Revised. The right outcome is 0.8631.	Response to CAR-5 is satisfactory and the same is closed.
CAR-6. The power connection system of the project site is not described correctly. Please revise as per the actual situation and elaborate the monitoring	Table 2 B.7.4.	Actually, there is a main meter shared by another wind farm together. The detailed approach of monitoring the electricity supplied to the grid by the	The alternative is verified to be applicable for the Project also. Response to CAR-6 is satisfactory and the same is



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3	Summary of project owner response	Validation team conclusion
approach.		Project has been revised in Section B.7.2 of the PDD. An alternative is used as per the previously registered CDM projects (UNFCCC registration No. 0561/0576/0994)	closed.
CAR-7. The description of definition of the meters used for determining the electricity supplied to the grid is not clearly. Please revise it for easy understanding.	Table 2 B.7.5.	Revised.	Response to CAR-7 is satisfactory and the same is closed.
CAR-8. The starting date of the crediting period estimated as 01/01/2008 which is impossible to be achieved.	Table 2 B.C.3.	Revised to 01/11/2008.	Response to CAR-8 is satisfactory and the same is closed.
CL-1. Please provide the spreadsheet which presents the calculation process from installed capacity (18MW) up to estimated annual electricity supplied to the grid	Table 2. A.2.2	According to the description in FSR (P1-3), considering the captive power and wind resources analyzed the "available generation hours" of the Project is 2262 hours viz. load factor is 0.258. The estimated annual electricity generation is thus calculated as, 18 MW x 2262 hour=40716 MWh	The relevant statement in FSR has been found to be consistent with the explanation of the footer. Response to CL-1 is satisfactory and the same is closed.
CL-2. Please provide the evidences of contribution to sustainable development made by the project	Table 2. A.2.2	Provided as shown in FSR (P4-1).	Response to CL-2 is satisfactory and the same is closed.



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3	Summary of project owner response	Validation team conclusion
are required.			
CL-3. Please present the EIA and corresponding approval issued by local EPA.	Table 2. A.3.1.	Provided. EIA was completed in November 2006 and its approval from EPA was issued in December 2006.	Response to CL-3 is satisfactory and the same is closed.
CL-4. Please present the FSR and corresponding approval issued by local authority.	Table 2. A.3.3.	Provided. FSR was completed in November 2006 and its approval from local DNRC was issued on 30/11/2006	Response to CL-4 is satisfactory and the same is closed.
CL-5. Please define the main components and facilities installed in the project site.	Table 2. B.3.1.2	The required description supplemented in the updated PDD (A.4.3.)	The main components of the wind farm have been properly defined. CL-5 is closed.
CL-6. Please provide the objective evidences to show the incentive from CDM was taken into consideration seriously before real action since the construction has been started.	Table 2 B.5.1.1	The original of Board Meeting Decision with English translation has been presented for assessment. The investment decision was made by PP on 15/12/2006	The required evidence has been checked to be substantial. Response to CL-6 is satisfactory and the same is closed.
CL-7. Please provide spreadsheet for the IRR of total investment.	Table 2. B.5.1.1	Provided	The IRR spreadsheet has been checked to be correct. Response to CL-7 is satisfactory and the same is closed.
CL-8. Please provide copy of "Interim Rules on	Table 2. B.5.1.1	Provided.	The data source has been checked that 8% is prevailing

VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3	Summary of project owner response	Validation team conclusion
Economic Assessment of Electrical Engineering Retrofit Projects” thereof 8% adopted as the benchmark.			for this power projects in the host country. Response to CL-8 is satisfactory and the same is closed.
CL-9. Please provide objective evidence of feed-in tariff that is likely endorsed to the Project as described in Sub-step 2c of Section B.5 of PDD. In addition, please present the objective evidence indicating the feed-in tariff is fixed as described in Sub-step 2d of Section B.5 of PDD.	Table 2 B.5.1.1.	The estimated feed-in tariff that much lower than that used in the approved FSR was based on the latest pricing regulation issued by NDRC. (See footer 6,7 and 8 in the start of Section B.5 of PDD) In 2008, the feed-in-tariff 0.61RMB/kWh (Incl. VAT) has been formally endorsed to the Project by NDRC. The approval letter has been presented. It shows that the early estimated tariff is more appropriate than that in the FSR.	The required evidence has been verified to be reliable and reflecting the pricing in local area of that time. Response to CL-9 is satisfactory and the same is closed.
CL-10. Please elaborate the reason of choosing variation range as -10% to +10% and the possibility that the financial indicators will beyond the range.	Table 2 B.5.1.1.	The variation range i.e.-10% to +10% is in line with the approach of the FSR. The required analysis has been added in the PDD.	The required data sources have been added. CL-10 is thus closed.
CL-11. Please explain the essential distinctions between the Project and existing similar projects in Sub-	Table 2 B.5.1.1.	The specific information including favorable loan or feed-in tariff endorsed for those two projects have been	The required data sources have been added.



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3	Summary of project owner response	Validation team conclusion
step4b of PDD Section B.5.		supplemented with public data sources.	CL-11 is thus closed.
CL-12. The feed-in tariff estimated in the FSR was much higher than that in the PDD, which resulted in a satisfactory Project IRR up to 8.85%. The difference needs to be clarified with supporting evidences.	Table 2 B.5.3.	The investment decision was relying on the parameters in the FSR approved by the authority of Heilongjiang Province and also taking into account the most likely feed-in tariff endorsed to local wind farms according to the most recently in forced pricing regulation issued by National Development & Reform Commission (NDRC) for renewable energy generation projects in Heilongjiang Province. However, it was known by the FSR developer after FSR completed. The feed-in tariff used in the FSR was referred to the previous wind farms which enjoyed a favorable tariff in some extent. However it will not be available for the wind farms newly built as from 2006. The pricing regulations above mentioned are public available on the website of NDRC, and the links stated in the footer 6 and 7 in Section B.5 of the revised PDD.	The data sources have been verified to be substantial and in force widely for the coming wind farms in Heilongjiang Province. <u>16/</u> As a consequence, the assumption that the investment decision made by PP was based on the parameters in the FSR with a most likely tariff is deemed to be reasonable at that situation. CL-12 is thus closed.
CL-13. How did the tariff impact the decision of the PP	Table 2	The most likely feed-in tariff for the wind farms in Heilongjiang Province	According to the date of making the investment decision

VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3	Summary of project owner response	Validation team conclusion
needs to be elaborated clearly.	B.5.3.a	estimated by the PP is lower than that used in the approved FSR, which resulted in the Project IRR down from 8.85% to 6.70% and thus to be financially unattractive. It can be re-produced by the IRR sheet.	viz. 15/12/2006, the time interval to the approved date of FSR viz. 30/11/2006 can be considered very short. Hence CL-13 is closed.
CL-14. The endorsed feed-in tariff for the Project issued by local authority afterwards is required to be presented as a supporting evidence to crosscheck with the early estimation in addition to relevant pricing regulations from government.	Table 2 B.5.3.c	The feed-in tariff endorsed to the Project (0.61RMB/KWh including VAT) by local authority on 23/072008 has been presented	The input value of the PDD has been crosschecked with this one and hence deemed to be appropriate. CL-14 is thus closed.
CL-15. Please provide the web links of "Notification on Determining Baseline Emission Factor of China Grid" quoted in Step1 of Section B.6.1 of PDD.	Table 2 B.6.1.1.	http://cdm.ccchina.gov.cn/web/NewsInfo.asp?NewsId=2193	Response to CL-15 is satisfactory and the same is closed.
CL-16. Please indicate if there is a procedure of "Internal Audit" for conducting QA/QC before DOE verification.	Table 2 B.7.5.	Added in the updated PDD. The procedures will be followed in the real operation.	The required procedure has been added in the monitoring plan to CL-16 is thus closed.
CL-17. As monitoring plan described, the main meter installed in grid side and backup meter installed in the wind farm, so please explain the procedure of monitoring the main meter by monitoring staff of the wind farm.	Table 2 B.7.8.	According to the statement in the PPA signed in 2008 the main meter are installed in the project site so the staff of the wind farm. The PDD has been revised accordingly.	The meters allocation has been re-defined as per the signed PPA. CL-17 is thus closed.



Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2/3	Summary of project owner response	Validation team conclusion
CL-18. Please clarify "The net electricity supplied and delivered to the grid by the Project is continuously measured" described in the Section B.7.1 as per the monitoring methodology.	Table 2 B.7..8.	According to the monitoring methodology, the frequency should be "Hourly measurement "	The metering frequency of the meters has been specified as per the methodology. CL-18 is thus closed.
CL-19. The documented evidences used for justifying the starting date of the Project is required to be presented.	Table 2 C.1.	The starting date has been determined as 18/04/2007 the day of signing the purchase contract of the turbines which prior to the real construction launch. The contract has been presented.	Response to CL-19 is satisfactory and the same is closed.
CL-20. Please provide the objective evidences to show that the public survey to the local villagers was carried out as described in the PDD.	Table 2 E.1.1.	The all 30 pieces of questionnaires with responses from the local villagers' have been provided to DOE for assessment.	The originals have been verified to be substantial. Response to CL-20 is thus closed.

- 1- GUIDELINES FOR COMPLETING CDM-PDD, CDM-NMB and CDM-NMM – Version 06.2 – 19 December, 2006
- 2- APPROVED CONSOLIDATED METHODOLOGY ACM0002 – Version 06 – 19 May 2006
- 3- TOOL FOR THE DEMONSTRATION AND ASSESSMENT OF ADDITIONALITY -Version 04-30 November, 2007
- 4- GUIDANCE ON THE DEMONSTRATION AND ASSESSMENT OF PRIOR CONSIDERATION OF THE CDM-EB41
- 5- GUIDANCE ON THE ASSESSMENT OF INVESTMENT ANALYSIS - Version 02-02 Aug 2008 EB 41



APPENDIX B: VERIFIERS CV'S

Mr. Robin Wang	Bureau Veritas Certification, China	Team Leader, CDM Lead Verifier. He has total experience of twelve years and has worked in energy sector in oil or gas companies in PR China. He obtained the certificate of CDM Lead Verifier and Lead Auditor for EMS ISO 14000. He was involved in approximate 30 CDM projects in PR China.
Ms. Jasmine Tang	Bureau Veritas Certification, China	Team Member, CDM Verifier. She has 2 years of CDM consulting experience in energy sector in P.R China and involved in approximate 20 CDM projects in P.R China. She has got qualification of Lead Verifier both of CDM and EMS ISO 14000 after intensive trainings on the Clean Development Mechanism in Bureau Veritas.
Mr. H B Muralidhar	Bureau Veritas Certification India Private Limited	Technical Reviewer He is the Lead auditor in for Environmental Management System, Quality Management system and Occupational Health and Safety Management System. He has several years of Industrial work experience in the field of environmental management systems He has undergone intensive trainings on the Clean Development Mechanism. He is the technical expert & conducted Validation / Verification for more than 30 CDM Projects.