



VALIDATION REPORT

ENERGY SYSTEMS INTERNATIONAL B.V.

VALIDATION OF THE

LIAONING QUJIAGOU WIND FARM PROJECT

BUREAU VERITAS CERTIFICATION

REPORT No. **CHINA-VAL/0292/2009**
REVISION No.01

Great Guildford House, 30 Great Guildford Street
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VALIDATION REPORT

Date of first issue: 23/07/2010	Organizational unit: Bureau Veritas Certification Holding SAS
Client: Energy Systems International B.V.	Client ref.: Morley Chung Wu SU

Summary:

Bureau Veritas Certification has made the validation of the Liaoning Qujiagou Wind Farm Project owned by Fuxin Shenhua Xiehe Wind Power Co., Ltd. located in Zhangwu County, Fuxin City, Liaoning 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 on-site visit and 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 11 and meets the relevant UNFCCC requirements for the CDM and the relevant host country criteria.

Report No.: BVC/CHINA-Val/0292/2009	Subject Group: CDM
Project title: Liaoning Qujiagou Wind Farm Project	
Work carried out by: (Jasmine) Tang Xuemei (Team Leader) (Tim) Wang Wei (Team Member) Li Yiting (Team Member)	
Work verified by: (Robin) Wang Jing (Internal Reviewer) 	
Date of this revision: 06/08/2010	Rev. No.: 01
Number of pages: 92	

Indexing terms

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Abbreviations change / add to the list as necessary

BM	Build Margin
BVC	Bureau Veritas Certification
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CM	Combined Margin
CO ₂	Carbon Dioxide
DNA	Designated National Authority
DOE	Designated Operational Entity
DRC	Development & Reform Commission
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
ERPA	Emission Reduction Purchase Agreement
FSR	Feasibility Study Report
GHG	Green House Gas(es)
GSP	Global Stakeholders Process
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
ISO	International Organization for Standardization
LoA	Letter of Approval
MP	Monitoring Plan
NDRC	National Development and Reform Commission
NEPG	Northeast China Power Grid
NGO	Non Government Organization
ODA	Official Development Assistance
OM	Operation Margin
PDD	Project Design Document
PLF	Plant Load Factor
PP	Project Participant
PPA	Power Purchase Agreement
PRC	Peoples' Republic of China
SWPC	Statistics of wind power installed capacity in China
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation & Verification Manual
WTG	Wind Turbine Generator

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1 INTRODUCTION

Energy Systems International B.V.(hereafter called “**ESI**”) has commissioned Bureau Veritas Certification (hereafter called “**BVC**”) to validate its CDM project Liaoning Qujiagou Wind Farm Project (hereafter referred to as “the Project”), owned by Fuxin Shenhua Xiehe Wind Power Co., Ltd. (hereafter referred to as “the PP”) in Zhangwu County, Fuxin City, Liaoning 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 Validation team

The validation team consists of the following personnel:

(Jasmine) Tang Xuemei Team Leader

Bureau Veritas Certification, Climate Change Lead Verifier

(Tim) Wang Wei Team Member

Bureau Veritas Certification, Climate Change Verifier

Li Yiting Team Member,

Bureau Veritas Certification, Climate Change 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 version 01.2 of the Clean Development Mechanism Validation and Verification Manual/Ref-1/, issued by the Executive Board at its 55th meeting on 30/07/2010. The protocol shows, in a transparent manner, criteria (requirements), means of validation 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 completed validation protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The Project Design Document (PDD) submitted by Energy Systems International B.V. (the consultant and the project participant from Annex I Party) and additional background documents related to the project design and baseline, i.e. country Law, Guidelines for Completing the Project Design Document (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 ESI revised the PDD and resubmitted it on 21/07/2010 and the validation findings presented in this report relate to the project as described in the PDD version 03./2/

2.2 Follow-up Interviews

On 19/01/2010, 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, the consultant and local stakeholders were interviewed (see Section **6-References**). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Fuxin Shenhua Xiehe Wind Power Co.,Ltd. (The PP)	<ul style="list-style-type: none"> ↗ Project background information and CDM consideration. ↗ 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 ↗ Government policies related to wind power projects
Local Stakeholder	<ul style="list-style-type: none"> ↗ Project background in details ↗ Stakeholder comments ↗ Social and environmental impact of the project
Energy Systems International B.V. (the consultant and the buyer)	<ul style="list-style-type: none"> ↗ Applicability of selected methodology. ↗ Baseline determination. ↗ Emission reductions calculation. ↗ Emission reduction 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.

Corrective Action Requests (CAR) is issued, where:

- (a) The project participants have made mistakes that will influence the ability of the project activity to achieve real, measurable additional emission reductions;
- (b) The CDM requirements have not been met;
- (c) There is a risk that emission reductions cannot be monitored or calculated.

BVC may also use the term Clarification Request (CL), if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

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

2.4 Internal Quality Control

The validation report underwent a technical review before requesting registration of the project activity. The technical review was performed by a qualified technical reviewer.

3 VALIDATION CONCLUSIONS

In the following sections, the conclusions of the validation are stated.

The findings from the desk review of the original project design documents and the findings from interviews during the follow up visit are described in the Validation Protocol in Appendix A.

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 1 Corrective Action Request and 13 Clarification Requests.

The CARs and CLs were closed based on adequate responses from the Project Participant (s) which meets the applicable requirements. They have been reassessed before their formal acceptance and closure.

The number between brackets at the end of each section corresponds to the VVM paragraph.

3.1 Approval (49-50)

The letters of approval have been received and the following support documentation has been verified by BVC:

- ✍ The DNA of China has issued a Letter of Approval /3/ in Sep. 2009, authorizing Fuxin Shenhua Xiehe Wind Power Co., Ltd. as the Project Participant and confirms that Liaoning Qujiagou Wind Farm Project contributes to China's Sustainable development.
- ✍ The DNA of Netherlands has issued a Letter of Approval/5/ on 13/01/2010, authorizing Energy Systems International B.V. as the Project Participant for Liaoning Qujiagou Wind Farm Project.

BVC received the letters from the project participants and does not doubt the letters' authenticity.

The title and contents of the letter of approval refers to the precise proposed CDM project activity title in the PDD being submitted for registration.

The letters of approval do not contain a specific version of both the PDD and the validation report.

✋ Bureau Veritas Certification considers the letters of approval are in accordance with para. **45 - 48 /VVM**.

✋ Complying with para. 49 and 50/VVM, BVC recognizes that the Project is helpful to fulfill the host country's goals of promoting sustainable development. The Project is expected to be in line with host-country specific CDM requirements because of:

- Reducing greenhouse gas emissions compared to a business-as-usual scenario
- Diversifying power sources and mitigating the demand and supply contradiction
- Helping to stimulate the growth of the wind power industry and encourage and promote the technology progress and commercial popularization of grid-connected renewable power generation projects in China compared to a business-as-usual scenario
- Reducing the emission of other pollutants resulting from the power generation industry in China

- Creating 20 employment opportunities for local community during the operation period of the Project and creating several employment opportunities for local community during the construction period of the Project

There are also evidences in various approvals issued by the local government of host country China, which are summarized as below,

- ✍ Feasibility Study Report (FSR) of the Project approved by Development and Reform Commission of Liaoning Province dated 01/12/2008 (Code: LFGNYZ[2008] No.1153)/7//8/
- ✍ Environment Impact Assessment (EIA) approved by Environmental Protection Administration of Liaoning Province dated 13/11/2008 (Code: LHSB [2008] No.74)/9//10/
- ✍ The Project is a grid connected wind power and the development of such Grid connected wind power is listed in the Renewable Energy Law. /6/

In the absence of the Project, equivalent amount of annual power output will be generated and supplied by the Northeast China Power Grid (NEPG), which is dominated by the thermal power generation; this is same with the baseline scenario. 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 the analysis presented in the PDD. /2/

The overall layout of the Project is sound, and the geographical (Zhangwu County, Fuxin City, Liaoning Province, P.R. China) and temporal (7 years) boundary of the Project is clearly defined.

✍ 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 the host country.

3.2 Participation (54)

The participation for each project participant has been approved by a Party of the Kyoto Protocol.

✍ Complying with para.54/VVM, BVC hereby confirms that by referring to the information on UNFCCC website i.e.

<http://maindb.unfccc.int/public/country.pl?country=CN>; and

<http://maindb.unfccc.int/public/country.pl?country=NL>

3.3 Project design document (57)

✍ Complying with para.57/VVM, BVC hereby confirms that the PDD complies with the latest Project Design Document Form (CDM-PDD) version 03.2 and guidance documents for completion of PDD version 07.

3.4 Changes in the Project activity

During the site visit, no changes were observed in the Project as compared to details mentioned in webhosted PDD.

The final PDD version 03 has following changes as compared to PDD version 02 that was webhosted.



1. The PLF of 0.238 of the Project was added in PDD version 03
2. The data source of the main technical parameters of key equipments in the Project in Table 1 was updated to purchase contract of the equipments.

3.5 Project description (64)

The Project is sited in Houxinjiu Town, Zhangwu County, Fuxin City, Liaoning Province, P.R. China. The central geographical coordinates of the Project are longitude of 122°50'01'E, latitude of 42°34'43"N.

The total installed capacity of the Project is 49.5MW, consisting of 33 wind turbines, each with the unit capacity of 1.5MW, supplied by Sinovel Wind Co., Ltd. The net electricity generated by the Project is 103,346MWh and the plant load factor (PLF) of the Project is 23.8% based on the information of the FSR, which was conducted by a third party and approved by local DRC. Therefore, BVC confirms that the PLF defined in the FSR complies with the requirement of "Guidelines for the Reporting and Validation of Plant Load Factors ver.1" (EB48, annex 11)./Ref-8/ The Project will result in annual emission reductions of 106,242 tCO₂e during the first crediting period.

The processes undertaken by BVC to validate the accuracy and completeness of the Project description include the document review and crosscheck with the FSR and relevant approvals issued by local governments.

☞ Complying with para.64/VVM, BVC hereby confirms that the project description in PDD /2/ is accurate and complete in all respects and that there are no changes to the project activity/design or boundary as compared to the webhosted PDD.

3.6 Baseline and monitoring methodology

3.6.1 Baseline and monitoring methodology

The Project applies the approved consolidated baseline and monitoring methodology ACM0002 version 11– "*Consolidated baseline methodology for grid-connected electricity generation from renewable sources*" dated 12/02/2010. /Ref-2/

By on-site visiting and interviewing with the PP, BVC confirms that the Project complies with the applicability conditions of methodology ACM0002 version 11./Ref-2/

- ☞ The Project is a grid-connected renewable wind power project that install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity(green-field plant);
- ☞ The Project does not involve switching from fossil fuels to renewable energy at the site of the Project.

BVC hereby confirms that the selected baseline and monitoring methodology, tool and other methodology component are previously approved by the CDM Executive Board, and are applicable to the Project, which, complies with all the applicability conditions therein.

Based on the on-site assessment, BVC hereby confirms that, as a result of the implementation of the Project, there are no greenhouse gas emissions occurring within the project boundary, which are expected to contribute more than 1% of the overall expected average annual emissions reductions, which are not addressed by the applied methodology.

3.6.2 Project boundary (80)

The spatial extent of the project boundary is clearly defined in line with ACM0002 version 11/Ref-2/ as the physical, geographical site of Project and all other power plants connected physically to the NEPG that the Project is connected to.

☞ Complying with para.80/VVM, BVC hereby confirms that the identification of project boundary is in line with the delineation of grid boundaries as provided in the latest version of “*Notification on Determining Baseline Emission Factor of China’s Grid*” published by NDRC (China’s DNA) on 02/07/2009 (hereafter called “*Notification of China-Grid EF*”)./11/ During on-site visit, via observations of the physical site, BVC hereby confirms that the identified boundary and the selected sources and gases are justified for the Project.

3.6.3 Baseline identification (87-88)

The Project is the installation of a newly built and grid-connected renewable power plant that delivers the generated electricity to the NEPG, hence, according to methodology ACM0002 version 11/Ref-2/, the baseline scenario is determined properly as:

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, as reflected in the combined margin (CM) calculations described in the “*Tool to calculate the emission factor for an electricity system*” version 02 (hereafter called “*Tool-Grid EF*”)./Ref-3/

According to the “*Notification of China-Grid EF*”/11/, the delineation of grid boundary of the Project is the NEPG. Furthermore, the baseline of the Project determined in the PDD i.e. “the provision of an equivalent amount of annual power output by Northeast China Power Grid which the Project is connected to” is transparent and deemed to be reasonable.

☞ Complying with para. 87 and 88/VVM, BVC hereby confirms that:

- (a) All the assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- (b) All documentation used is relevant for establishing the baseline scenario and correctly quoted and interpreted in the PDD;
- (c) Assumptions and data used in the identification of the baseline scenario are justified appropriately, supported by evidence and can be deemed reasonable;
- (d) Relevant national and/or sector policies and circumstances are considered and listed in the PDD;
- (e) The approved baseline methodology has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed CDM project activity.

3.6.4 Algorithms and/or formulae used to determine emission reductions (92-93)

The steps taken to assess the requirement outlined in paragraph 88 the VVM are described below:

According to the baseline methodology ACM0002 version 11/Ref-2/ and “*Tool-Grid EF*” version 02/Ref-3/, the baseline emission factor was calculated as following seven steps. In addition, the calculation in the PDD refers to the latest “*Notification of China-Grid EF*”/11/



published by China's DNA on 02/07/2009, which is most recent information available at the time of CDM-PDD submission to BVC for validation.

As per "*Tool-Grid EF*" version 02/Ref-3/, seven steps therein are applied to calculate the emission factor:

Step 1.-Identify the relevant electricity systems.

NEPG is selected as the electric power system of the Project as per "*Notification of China-Grid EF*"/11/ issued by China's DNA at the time of commencing this validation and there are no net electricity imports to NEPG.

☞ BVC was able to confirm that the identified electric power system of the Project is consistent with "*Notification of China-Grid EF*"/11/. The geographical extent of the project activity system has been documented transparently and all grid power plants connected to the system have been identified.

Step 2.- Choose whether to include off-grid power plants in the project electricity system (optional)

Option I (only grid power plants are included in the calculation) provided in "*Tool-Grid EF*" version 02 is chosen to calculate the operating margin and build margin emission factor.

Step 3.-Select an operating margin (OM) method.

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 during the last 5 years.

☞ Only grid power plants are included in the calculation. BVC has checked the calculation for low cost/must-run constitution of the total grid generation and confirmed the calculation is correct. Therefore, simple OM emission factor calculation method is selected reasonable. A 3-year generation-weighted average, based on the most recent data from China Electric Power Yearbook 2006-2008, which are the data available at the time of submission of the CDM-PDD to the BVC for validation, has been applied and calculated correctly.

Step 4.-Calculate the operating margin emission factor according to the selected method.

Option B, Based on data on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system, is used to calculate simple OM emission factor. The data on electricity generation and auxiliary electricity consumption are obtained from the China Electric Power Yearbook from 2006 to 2008 (published annually). The data on different fuel consumptions for power generation and the net caloric values of the fuels are obtained from the China Energy Statistical Yearbook from 2006 to 2008. The emission 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."

The renewable crediting period is adopted for the Project and the OM will be fixed for the first crediting period.

☞ The data source are deemed reasonable and BVC confirms that the calculation can be replicated using the data and parameter provided in the PDD.

Step 5.-Identify the group of power units to be included in the build margin (BM).

The set of power capacity additions in the electricity system that comprise 20% of the system generation (in MWh) and that have been built most recently (Option b) is adopted properly for the Project.

Considering data availability, deviation accepted by EB was used in the PDD i.e.

- 1) Use of capacity additions during the last 1~3 years for estimating the build margin emission factor for grid-connected electricity.
- 2) Use of weights estimated using installed capacity in place of annual electricity generation.

☞ BVC hereby confirms that the data source and approaches taken are deemed reliable.

Step 6.-Calculate the build margin emission factor.

The BM emission factor of the power grid is calculated by multiplying the emission factor of the thermal power with the share of the thermal power in the most recently added approach to 20% of total installed capacity. The emission factor for thermal power is determined based on the most advanced and commercially available technology endorsed by China's DNA.

☞ BVC hereby confirms that the data sources are deemed reliable and calculation is appropriate.

Step 7.-Calculate the combined margin (CM) emissions factor.

According to the "Tool-Grid EF"/Ref-3/, the default weights $\omega_{OM} = 0.75$ for Operating Margin and $\omega_{BM} = 0.25$ for build Margin in the first crediting period of Wind Power Projects are adopted.

As per baseline methodology ACM0002 and "Tool-Grid EF", the baseline emission sources considered are the emission reduction ER_y during the crediting period is the difference between baseline emissions, project emissions and leakage. These are:

- 1) Baseline emissions: baseline emissions BE_y (tCO₂) are equal to baseline emission factor $EF_{grid,CM,y}$ (tCO₂/MWh) times the net electricity supplied to the grid EG_y (MWh).
- 2) Project Emissions: the project emissions for wind power projects are regarded as zero as per methodology ACM002 version 10.
- 3) Leakage: no leakage has to be considered as per methodology.
- 4) Emission reductions:

$$ER_y = BE_y - PE_y - LE_y = BE_y = EF_{grid,CM,y} \times EG_y$$

With reference to the Tool-Grid EF, the Simple OM emission factor ($EF_{grid,OM,y}$) of NEPG is calculated as 1.1293tCO₂e/MWh. Similarly, the build margin emission factor ($EF_{grid,BM,y}$) of the NEPG is calculated as 0.7242tCO₂e/MWh.

Therefore, the combined baseline emission factor is determined ex-ante and will remain fixed during the first crediting period, viz.

$$EF_{grid,CM,y} = 1.1293 \times 0.75 + 0.7242 \times 0.25 = 1.028025 \text{ tCO}_2\text{e/MWh}$$

According to the estimated annual electricity delivered to the grid 103,346MWh, the estimated annual emission reductions of the Project is 106,242tCO₂e during the first crediting period represents a reasonable estimation using the assumptions given by the Project.

☺ Complying with para.92 and 93/VVM, BVC hereby confirms that:

- (a) All assumptions and data used by the project participants are listed in the PDD, including their references and sources;
- (b) All documentation used by project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD;
- (c) All values used in the PDD are considered reasonable in the context of the proposed CDM project activity;
- (d) The baseline methodology ACM0002 and “Tool-Grid EF” has been applied correctly to calculate project emissions, baseline emissions, leakages and emission reductions;
- (e) All estimates of the baseline emissions can be replicated using the data and parameter values provided in the PDD.

3.7 Additionality of a project activity (96)

The steps taken and sources of information used to cross-check the information contained in the PDD on this matter are described below:

“*Tool for Demonstration and Assessment of Additionality*” version 5.2/Ref-4/ has been employed for demonstrating and assessing the additionality of the Project. The additionality of the Project has been carefully checked, in doing so BVC has put the main focus on the following issues:

3.7.1 Prior consideration of the clean development mechanism (103)

It has been demonstrated by the timeline of events of the Project that the CDM revenues were seriously considered in the decision to proceed with the Project prior to start of the Project and, the continuing and real action were taken to secure CDM status for the Project in parallel with its implementation:

Table 2 Timeline of the Project

Date	Events	Evidences Verified
Jun. 2008	The FSR of the Project was finalized, in which the CDM revenues were considered as the Project was economic unattractive without CDM revenues.	/7/
01/07/2008	The investment decision of the Project was made at the board meeting to implement the Project with taking CDM revenues into consideration.	/12/
16/07/2008	Emission Reduction Purchase Agreement (ERPA) and the CDM consulting Contract of the Project were signed.	/13//14/
20/07/2008	The Wind Turbine Generators (WTGs) purchase contract was signed.(Start date of the Project)	/15/

20/08/2008	The civil engineering contract was signed.	/16/
03/12/2008	Order to Commence was issued and the construction of the Project was started.	/17/
22/09/2009	The PP got the LoA of China's DNA	/4/
30/11/2009	The PDD version 02 was uploaded for GSP	/1/

From above table, BVC was able to verify that the start date of the Project determined as 20/07/2008 is appropriate (the signed date of the WTGs Purchase Contract)/15/, which is the earliest of the dates at which the implementation or construction or real action of the Project began. This is in accordance with the latest CDM glossary. /Ref-7/

The Project is an existing project according to the definition in the "Guidance on the demonstration and assessment of prior consideration of the CDM" version 03 (Annex 22, EB 49, 11/09/2009)/Ref-5/ (hereinafter called "Guidance-Prior Consideration"), i.e. the start date of the Project is before 02/08/2008. The start date of the Project is also prior to the date of publication of the PDD for global stakeholder consultation 30/11/2009, and BVC has assessed the PP prior consideration of the CDM through documents reviews and confirmed that the benefits of the CDM were a decisive factor in the decision to proceed with the Project as per provided board meeting minutes./12/

BVC has checked all reliable evidence from the PP, including CDM consulting service contract/14/ and ERPA/13/, and is able to verify that all documents are substantial and authentic at that situation in the host country. The gap between the documented evidences are less than two years, BVC was therefore able to verify that continuing and real action were taken to secure CDM status for the Project in parallel with its implementation, which are evident in accordance with the *Guidance-Prior Consideration*./Ref-5/

☞ According to the latest Glossary of CDM terms Ver. 05 and "*Guidance-Prior Consideration*",/Ref-5//Ref-7/ BVC confirms that the start date of the Project in the PDD is appropriate and reasonable at that situation.

☞ Complying with para.100-103/VVM, BVC has verified this issue, which could significantly influence the additionality of the Project, and confirms that the serious consideration under the context of the Project has been addressed appropriately in accordance with the above guidance. Consequently, the chronological events described with the relevant documented evidences are the objective foundation on which BVC developed its validation opinions.

3.7.2 Identification of alternatives (107)

The plausible and credible alternatives to the Project were identified as per the "*Tool-Additionality*" Version 05.2:

Alternative I	Construction of a thermal power plant with an equivalent amount of annual electricity generation
Alternative II	The Project activity was undertaken without being registered as a CDM project activity
Alternative III	Construction of a power plant using other sources of renewable energy



with equivalent amount of annual electricity generation

Alternative IV Provision of an equivalent amount of annual power output by the NEPG into which the Project is connected to

Alternative I was correctly eliminated through examination of current practice in China in which the laws or regulations applies. According to the Notice on Strictly Prohibiting the Installation of Thermal Generators with the Capacity of 135MW or Below /19/ issued by the General Office of the State Council, Decree No. 2002-6, construction of thermal power plants of less than 135MW are prohibited in the areas covered by the large grid such as provincial grids in China.

Alternative III was eliminated by analyzing the commercial exploitation feasibility of local renewable energy resources including Solar PV, biomass and hydropower as addressed in the PDD. Due to the lack of hydro resource/20/ and poor economic benefits of generation from biomass/21/ and the technology development status of power generation from solar PV/22/ in China, power generation from hydropower, solar PV and biomass are not feasible in local region.

☞ Complying with para.107/VVM, BVC was able to verify that the alternatives identified to the Project are credible and complete, and found satisfactory to exclude alternatives (II) and (III). Hence **Step 1** of “*Tool-Additionality*” was applied appropriately.

3.7.3 Investment analysis (114)

Considering the baseline scenario identified above, option III, the Benchmark Analysis, is applied in the investment analysis as per the *Sub-step 2b* of **Step 2** of “*Tool-Additionality*” /Ref-4/, which is in accordance with “*Guidance on the Assessment of Investment Analysis*” (Ver. 3.1)/Ref-9/

Project IRR of 8% (post-tax) was employed by the Project as benchmark, which is sourced from the “Interim Rules on Economic Assessment of Electric Power Engineering Retrofit Projects”/23/ issued by State Power Corporation of China in 2002. BVC has verified this benchmark and confirms that it is widely applied in Chinese power generation industries; therefore, BVC confirms that the benchmark is suitable for the Project.

Before reviewing the IRR calculation, BVC has validated the basic parameters listed in the PDD in accordance with the Guidance of **Para. 113/VVM**. /Ref-1/

BVC has verified the IRR calculation/24/ and found that the input values are fully taken from the approved FSR/7/, which was carried out by an authorized third party viz. Liaoning Electric Power Design Institute, a top class design institute in the power industry authorized by the government of China.

According to the relevant verified evidences, BVC confirms that the PP’s final decision to proceed with the investment in the Project has been made based on the approved FSR/11/, which was finalized in Jun. 2008. Based on the conclusion in the FSR, PP decided to invest the Project with consideration of CDM revenues on 01/07/2008./12/ Given this relative short period of time between FSR and the decision to proceed with the Project, BVC was therefore confident that it is unlikely in the context of the underlying Project that the input values would have materially changed, which is in line with **Para. 113 (a) /VVM**.

At the same time, BVC compared the input values for the financial analysis in the PDD/2/ and FSR/7/, and confirms that all input values used in the financial analysis are taken from the FSR; BVC was therefore with opinion of that the investment analysis is in accordance with **Para 113(b) /VVM**.

Furthermore, BVC has reviewed the IRR calculation sheet and confirms that:

- ✎ The **operation period** of 20 years was based on the lifetime of the main equipments according to Maintenance and Repair Manual for SL1500 Wind Power Units /25/ and selected reasonably following the requirements of Para.3 of "Guidance on the Assessment of Investment Analysis" ver. 03.1./Ref-9/
- ✎ The **residual value rate** of 5% was selected reasonably following relevant regulation in China, i.e. Enterprise Income Tax Law of China issued on 19/03/2007 and effective from 01/01/2008./39/
- ✎ The **total project cost** in the approved FSR/7/ is 462,500,000RMB and the unit cost of the Project was 9,343RMB/kW (about 934 €/kW).
 - According to China Wind Power Report 2008 published by China Environmental Science Press in Oct. 2008/26/, the unit cost of wind power projects varies from 800€/kW to 1150€/kW, and the total cost of the Project falls in this range and verified appropriate.
 - Furthermore, BVC compared the unit cost with all registered CDM wind power projects in Liaoning Province and found that the unit cost of the Project (9,343RMB/kW) is within the reasonable range (from 8,306RMB/kW to 10,485RMB/kW), especially for the projects with the unit capacity of 1.5MW (from 8,912RMB/kW to 10,485RMB/kW).

Table 3 Comparison of the unit cost

Reg. no.	Project Title	Capacity (MW)	Unit Capacity (MW)	Total project cost (10 ⁴ RMB)	Unit cost (RMB/kW)
0537	Liaoning Kangping 24.65MW Wind Farm Project	24.65	0.85	22,843	9,267
0539	Liaoning Zhangwu 24.65MW Wind Farm Project	24.65	0.85	22,729	9,221
0883	Liaoning Changtu Wind Farm Project	49.5	0.75	41,864	8,457
1501	Liaoning Huanren Niumaodashan Wind Power Project	24.65	0.85	22,546	9,146
1924	Liaoning Faku Heping Wind Power Project	49.3	0.85	43,052	8,733
1965	Liaoning Faku Wanghaisi East Wind Power Project	22.1	0.85	19,475	8,812
2149	Diaobingshan New-built 49.5MW Wind Power Station Project	49.5	0.75	42,817	8,650
2817	Liaoning Changtu Shihu Wind Power Project	49.3	0.85	40,950	8,306

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2864	Liaoning Kangping Furaoshan Wind Power Project	49.5	0.75	41,457	8,375
1446	Liaoning Xingcheng Haibin Wind Farm Project	49.5	1.5	44,113	8,912
2223	Liaoning Faku 1st phase Wind Power Project	49.5	1.5	47,468	9,589
2918	Huaneng Liaoning Fuxin Phase II Wind Farm Project	300	1.5	288,280	9,609
3112	Liaoning Province Zhangwu Mazongshan Wind Farm Project	49.5	1.5	51,903	10,485

- BVC has crosschecked the total project cost with the already signed contracts of key equipments and engineering/15//16//27/, and found that the total price indicated in the signed contracts, has exceeded 93% of the total project cost and higher than the same parts in the FSR.

Therefore, BVC can confirm that the assumption for the total project cost is appropriate.

- ↪ The **tariff** of 0.61RMB/kWh (incl. VAT) of the Project used in the PDD is taken from the FSR which was completed by a qualified third party in Jun. 2008. BVC has reviewed the relevant policies and tariff approvals of wind power projects in Liaoning Province since 11/11/2001 and summarized as follows:

- On 28/05/2003, China National Development and Reform Committee (NDRC) issued the document Fa Gai Jia Ge[2003]No.424/28/, and the tariff of wind power projects located in Liaoning Province was approved to be 0.55 RMB/kWh (incl. VAT) in the document.
- On 03/12/2007, NDRC issued the document Fa Gai Jia Ge [2007] No.3303/29/, and the tariff of wind power projects located in Liaoning Province was approved as 0.61RMB/kWh (incl. VAT) in the document.
- On 21/07/2008, NDRC issued the document Fa Gai Jia Ge [2008] No.1876 /30/, and the tariff of wind power projects located in Liaoning Province was approved as 0.61RMB/kWh (incl. VAT) in the document.
- According to the latest tariff policy (Fa Gai Jia Ge [2009] No.1906)/31/ issued by NDRC in Jul. 2009, the tariff of wind power projects in Liaoning Province is still 0.61RMB/kWh (incl. VAT).
- Furthermore, the tariff of the Project was approved to be 0.61RMB/kWh (incl. VAT) according to the tariff approval/32/ issued by the Price Bureau of Liaoning Province on 26/11/2009. The tariff approval also indicates that the tariff for other wind projects in Liaoning Province is 0.61RMB/kWh (incl. VAT).

In summary, at the time of FSR finalization in Jun. 2008 and investment decision of the Project was making on 01/07/2008, the tariff of 0.61 RMB/kWh (incl. VAT) for wind power projects in Liaoning Province was available (document Fa Gai Jia Ge [2007] No.3303 was issued on 03/12/2007)./7//12//29/. The tariff of wind power projects in Liaoning Province has stable at 0.61 RMB/kWh (incl. VAT)

since 2007, and the tariff of the Project was also approved to be 0.61 RMB/kWh (incl. VAT) by the Price Bureau of Liaoning Province /32/.

Furthermore, BVC studied the approved tariff of all registered CDM wind power projects in Liaoning Province as shown in the Table 4 below.

Table 4 Approved tariff of registered CDM wind power projects in Liaoning Province

Reg. no.	Project Title	Approved tariff (incl. VAT) (RMB/kWh)	Tariff approval time	Tariff approval document
0537	Liaoning Kangping 24.65MW Wind Farm Project	0.55	28/05/2003	Fa Gai Jia Ge [2003]No.424
0539	Liaoning Zhangwu 24.65MW Wind Farm Project	0.55	28/05/2003	Fa Gai Jia Ge [2003]No.424
0883	Liaoning Changtu Wind Farm Project	0.61	03/12/2007	Fa Gai Jia Ge [2007] No.3303
1446	Liaoning Xingcheng Haibin Wind Farm Project	0.61	26/11/2009	Liao Jia Han [2009] No.126
1501	Liaoning Huanren Niumaodashan Wind Power Project	0.61	03/12/2007	Fa Gai Jia Ge [2007] No.3303
1924	Liaoning Faku Heping Wind Power Project	0.61	26/11/2009	Liao Jia Han [2009] No.126
1965	Liaoning Faku Wanghaisi East Wind Power Project	0.61	03/12/2007	Fa Gai Jia Ge [2007] No.3303
2149	Diaobingshan New-built 49.5MW Wind Power Station Project	0.61	26/11/2009	Liao Jia Han [2009] No.126
2223	Liaoning Faku 1st phase Wind Power Project	0.61	26/11/2009	Liao Jia Han [2009] No.126
2817	Liaoning Changtu Shihu Wind Power Project	0.61	26/11/2009	Liao Jia Han [2009] No.126
2864	Liaoning Kangping Furaoshan Wind Power Project	0.61	03/12/2007	Fa Gai Jia Ge [2007] No.3303
2918	Huaneng Liaoning Fuxin Phase II Wind Farm Project	0.61	26/11/2009	Liao Jia Han [2009]No.126
3112	Liaoning Province Zhangwu Mazongshan Wind Farm Project	0.61	26/11/2009	Liao Jia Han [2009]No.126

As shown in the Table 4, there was no tariff higher than 0.61 RMB/kWh (incl. VAT) for wind power projects in Liaoning Province since 11/11/2001. Furthermore, according to Information note on the highest tariffs applied by the executive board in its decisions on registration of projects in the People's Republic of China version 01/Ref-10/, the highest applicable wind tariff in Liaoning Province applied by the Executive Board is 0.61 RMB/kWh (incl. VAT) too.

Therefore, BVC can confirm that the tariff of 0.61RMB/kWh (incl. VAT) assumed in PDD is valid and applicable to the Project at the time of the investment decision.

- ✎ The **supplied electricity** of the Project was crosschecked with the design parameters of wind turbine manufactured by Sinovel Wind Co.,Ltd. and determined by software calculation based on the wind resource data of the latest 30 years (1977 to 2006) in the region and the onsite measured wind data from 01/10/2005 to 30/09/2006. Comparison has been made on various options including wind turbine arrangement, wind turbine model, installation height to optimize the design in the FSR. Therefore the supplied electricity is found appropriate.
- The PLF of the Project is 0.238, which was determined in the FSR /7/ finalized by Liaoning Electric Power Institute, a third party with an A Level of certification in power industry authorized by the government and contracted with the PP. The FSR was approved by the local government /8/.BVC can confirm that the PLF in the FSR/PDD was determined by a qualified third party contracted with the PP and consistent with the requirement of EB48, Annex11 "Guidelines for the Reporting and Validation of Plant Load Factors"./Ref-8/
- BVC has checked the PLF of all registered wind projects in Liaoning Province which rang from 0.210 to 0.261. The PLF of the Project falls in this range and is close to the average value.

Thus, BVC can confirm that the PLF is appropriate.

Table 5 Comparison of PLF

Reg. no.	Project Title	Installed Capacity(MW)	Supplied electricity(MWh)	PLF (%)
0537	Liaoning Kangping 24.65MW Wind Farm Project	24.65	53,230	24.7
0539	Liaoning Zhangwu 24.65MW Wind Farm Project	24.65	51,414	23.8
0883	Liaoning Changtu Wind Farm Project	49.5	90,886	21.0
1446	Liaoning Xingcheng Haibin Wind Farm Project	49.5	111,007	25.6
1501	Liaoning Huanren Niumaodashan Wind Power Project	24.65	53,930	25
1924	Liaoning Faku Heping Wind Power Project	49.3	106,230	24.6

1965	Liaoning Faku Wanghaisi East Wind Power Project	22.1	47,743	24.7
2149	Diaobingshan New-built 49.5MW Wind Power Station Project	49.5	93,555	23
2223	Liaoning Faku 1st phase Wind Power Project	49.5	101,292	23.4
2817	Liaoning Changtu Shihu Wind Power Project	49.3	101,420	23
2864	Liaoning Kangping Furaoshan Wind Power Project	49.5	97,486	22.48
2918	Huaneng Liaoning Fuxin Phase II Wind Farm Project	300	639,490	24.3
3112	Liaoning Province Zhangwu Mazongshan Wind Farm Project	49.5	113,032	26.1

➤ BVC confirms that the **annual O&M cost** is the sum of the maintenance cost, salary & social welfare, materials fee, miscellaneous cost and the insurance fee, which was studied based on the “Code on Compiling Feasibility Study Report of Wind Farms”/33/ issued by NDRC and “Economic Evaluation Method and Parameters for Project Construction” (version 3)/34/

- According to the “Wind Energy – the Facts”/35/ implemented by European Wind Energy Association (EWEA) published in Mar. 2009, the O&M cost is generally estimated to be around 1.2 to 1.5 eurocents (c€) per kWh (0.12RMB/kWh to 0.15RMB/kWh) of wind power produced, the O&M cost of the Project was calculated as 0.13RMB/kWh, falls in above range.
- BVC has checked the O&M costs of all registered CDM wind projects in Liaoning Province and found that the O&M costs range from 2.25% to 4.45% of the total project cost (see Table 6). The O&M cost of the Project is 2.99% of the total investment, within the reasonable range.

Therefore, BVC can confirm that the annual O&M cost estimated in FSR is appropriate.

Table 6 Comparison of O&M costs

Reg. no.	Project Title	Total project cost(10 ⁴ RMB)	O&M costs(10 ⁴ RMB)	O&M cost/total project cost
0537	Liaoning Kangping 24.65MW Wind Farm Project	22,843	-	-
0539	Liaoning Zhangwu 24.65MW Wind Farm Project	22,729	-	-
0883	Liaoning Changtu Wind Farm Project	41,864	-	-

1446	Liaoning Xingcheng Haibin Wind Farm Project	44,113	994	2.25%
1501	Liaoning Huanren Niemaodashan Wind Power Project	22,546	875	3.88%
1924	Liaoning Faku Heping Wind Power Project	43,052	1,065	2.47%
1965	Liaoning Faku Wanghaisi East Wind Power Project	19,475	866	4.45%
2149	Diaobingshan New-built 49.5MW Wind Power Station Project	42,817	1,253	2.93%
2223	Liaoning Faku 1st phase Wind Power Project	47,468	1,386	2.92%
2817	Liaoning Changtu Shihu Wind Power Project	40,950	1,006	2.46%
2864	Liaoning Kangping Furaoshan Wind Power Project	41,457	1,180	2.85%
2918	Huaneng Liaoning Fuxin Phase II Wind Farm Project	288,280	6,608	2.29%
3112	Liaoning Province Zhangwu Mazongshan Wind Farm Project	51,903	1413.87	2.72%

➤ A post-tax benchmark is applied for the investment analysis of the Project. BVC has checked the IRR calculation sheet and confirms that the **actual interest** has been taken into account in the calculation of income tax. BVC has cross-checked the debt-equity ratio in the FSR with the loan agreement of the Project and found consistent. BVC has also cross-checked the loan interest rate with the loan agreement /36/ and historical data of RMB loan interest rates/37/ and found consistent too. Furthermore, the debt-equity ratio estimated in the FSR was also approved by local DRC, and the loan agreement value shows that the debt-equity ratio taken from the FSR is consistent with actual capital situation that PP raising.

Therefore, BVC can confirm that the debt-equity ratio and loan interest in the PDD are reasonable.

➤ BVC has checked the IRR calculation sheet and confirmed that **depreciation** has been deducted in estimating gross profits on which tax is calculated, and be added back to net profits for the purpose of calculating the financial indicator. BVC confirms that the depreciation calculated complies with "Economic Evaluation Method and Parameters for Project Construction" (version 3). /34/

➤ BVC has also verified values of various **taxes** through crosschecking with the taxation rules conducted by local government and found to be fully consistent.

➤ The VAT of 8.5% complies with the *Notice of Value added Tax Policy Regarding Products Using Certain Synthesized Resources and Other*



Products issued by the Ministry of Finance and the State Administration of Taxation on Dec. 2001 and effective from 01/01/2002./38/

- The income tax of 25% complies with *Enterprise Income Tax Law of China* which is effective from 01/01/2008./39/

In summary, based on the above reliable data sources, BVC was able to confirm that the input values from the FSR are valid and applicable at the time of making the investment decision. Therefore, BVC confirms that the investment analysis is in accordance with **Para. 113 (c) /VVM.**

Based on the data from the approved FSR, the project IRR of the Project without CDM revenues is 6.45%, lower than the benchmark, which shows that the Project is not financially attractive without CDM benefits compared to the benchmark of 8%(post-tax).

BVC has reviewed the IRR calculation and confirmed that the IRR processing is consistent with the “*Guidance on the assessment of investment analysis*” version 3.1/Ref-9/ and the data sources as well as the analysis approach are reliable and based on the FSR linking directive to the actual situation of the host country. Four financial parameters were taken as uncertain factors for sensitivity analysis of financial attractiveness:

- Total project cost
- O&M cost
- Supplied electricity
- Tariff (including VAT)

According to “Code on compiling feasibility study report of wind power projects”/33/ published by NDRC, total project cost, O&M cost, supplied electricity and tariff should be taken as uncertain factors to do sensitivity analysis, and $\pm 10\%$ variation of above factors shall be considered in the sensitivity analysis. Therefore, BVC confirms that the variables with $\pm 10\%$ variations performed for sensitivity analysis is deemed to be appropriate for the Project.

- If the **total project cost** decreases by 10.30%, the IRR of the Project would reach the benchmark. However, it is not likely that the total investment will decrease by 10.30%, as the total value of already signed contracts of main equipments and engineering/15//16//27/ was higher than the value of the same parts estimated in the FSR and has accounted 93% of the total value in the FSR even when the Project has not fully completed construction. Therefore BVC can confirm that the total project cost would not decrease by 10.30%.
- The **annual O&M cost** comprises materials expense, maintenance cost, employee salary and welfare, miscellaneous cost and insurance fee. With a decrease in annual O&M cost by 43.10%, the Project IRR would reach 8%. However, the cost of materials and labours keeps increasing in recent years./40/ Thus it is evidently impossible.
- If the **supplied electricity** increases by 10.35%, the project IRR would reach the benchmark. However, it is not likely that the supplied electricity will increase by 10.35%, as the annual supplied electricity of the Project was determined by a qualified third party using software calculation based on the wind resource data of the latest 30 years (1977 to 2006) in the region and the onsite measured wind data from 01/10/2005 to 30/09/2006. Thus, BVC can confirm that the supplied electricity would not increase by 10.35%.



- If the **tariff** increases by 10.35%, the project IRR would reach the benchmark. However, it is unlikely that the tariff would increase by 10.35%, as there is no higher tariff than 0.61RMB/kWh(incl. VAT) for wind power projects in Liaoning Province since 11/11/2001 and the tariff of the Project has been approved by the Price Bureau of Liaoning Province./32/ Thus BVC can confirm that the tariff would not increase by 10.35%.

Considering of the CERs sales revenues (calculated with 11EUR/tCO₂e), the project IRR of the Project can exceed the benchmark at 9.55%.

BVC can conclude that both of the variation range and relevant assumptions stated in the PDD are robust and the investment of the Project is deemed to be financially unattractive.

☺ Complying with para.114/VVM, BVC, based on the assessment result by the financial expert engaged, hereby confirms that the underlying assumptions are appropriate and the financial calculations are correct.

3.7.4 Barrier analysis (118)

The **Step 3** Barrier analysis was not applied for the Project.

3.7.5 Common practice analysis (121)

The Common practice analysis was addressed as per **Step 4** of “Tool-Additionality” and latest rules issued by EB.

The wind power projects were implemented under the administration of provincial level government. The activities in the same province have the similar wind resource, grid structure, geological and transportation conditions, economic developing status, hence BVC considered that delineating Liaoning Province as the border is reasonable.

The Project is a large scale wind farm with installed capacity of 49.5MW, and wind power projects larger than 15MW are considered as large scale project. Therefore, BVC can confirm that wind farm projects with installed capacity larger than 15MW considered as similar activities to the Project is reasonable.

Since 2002, the reform has been implemented in China’s electric power sector to separate the grid and the power plant from the state power company/41/, therefore BVC can confirm that the wind power projects constructed after 2002 will face to comparable regulatory framework and reasonable for the common practice analysis.

Subsequently, BVC identified the similar projects in terms of:

- a) Non-CDM wind power projects in Liaoning Province, and
- b) Wind power projects with capacity larger than 15MW
- c) Construction after 2002.

Following these criteria, BVC verified the wind farms as identified in the PDD by cross-checking the public statistics i.e. “*Statistics of wind power installed capacity in China (2007)*”/42/ dated 28/02/2008 conducted by Mr. Shi Pengfei, the authoritative Expert in the wind power sector.

As the public information presents, no project is identified as similar projects with the above criteria. Therefore BVC can conclude that the Project is not common practice in the region.



☞ Complying with para.121/VVM, Based on above demonstration that in accordance with “*Tool-Additionality*” and supported by reliable data sources, it is the opinion of BVC that the Project is thus additional.

3.8 Monitoring plan (124)

The Project uses the approved consolidated monitoring methodology ACM0002 version 11 for grid connected electricity generation from renewable sources.

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 3.5.1 above. BVC hereby confirms that the monitoring plan complies with the requirements of the methodology.

The ex-ante combined margin emission factor is determined based on the most recent information available. Accordingly the monitoring plan includes the electricity delivered by the Project to the grid and electricity imported by the project from the grid which can be monitored by two bidirectional meters installed at the step-up substation at the project site. The main meter is used for usual monitoring and the backup meter was used for monitoring when the main meter's malfunction. The precision of the meters will be at least 0.5S. The electricity exported to the grid by the Project and imported from the grid will be cross-checked with the electricity receipts and the net electricity supplied to the grid by the Project will be calculated as the electricity exported to the grid minus the electricity imported from the grid. The meters are expected to be calibrated once a year.

Operational management for the Project is comprehensively detailed in PDD and this includes description of the responsibility, procedure reference, calibration frequency and maintenance needs.

By reviewing the provided training plan and on-site interview with the PP, BVC confirms that the monitoring arrangements described in the monitoring plan are feasible within the project design, and the means of implementation of the monitoring plan are sufficient to ensure the emission reductions achieved by the Project can be reported ex post and verified.

☞ Complying with para.124/VVM, BVC hereby confirms that the monitoring arrangements described in the monitoring plan are feasible within the project design and the project participants are able to implement the monitoring plan.

3.9 Sustainable development (127)

China's DNA confirmed the contribution of the project to the sustainable development of the host Party. Refer to item 3.1 of this report.

3.10 Local stakeholder consultation (130)

Prior to the publication of the PDD on the UNFCCC website, viz. in Dec. 2008, the Project owner conducted surveys to stakeholders by distributing 51 copies of questionnaires and collecting responses from all interviewees from local villagers and residents near the Project area, and all 51 questionnaires /43/ were recovered with 100% response rate.

The returned questionnaires with answers from stakeholders are maintained by the PP and were presented to BVC for assessment during the site visit of the validation activity.

The majority of the local stakeholders are supportive of the project implementation, while some stakeholders are concerned about the noises. The PP has promised to strictly



implement the pollution prevention measures stated in the EIA form and its approval issued by government./9//10/

BVC assessed the questionnaires/44/ answered by the stakeholders, and confirms that the process of local stakeholder consultation is adequate.

✌️ Complying with para.130VVM, BVC hereby confirms that the local stakeholder consultation was performed and the Project will be beneficial to the local sustainable development without negative affect on the local stakeholders.

3.11 Comments by Parties, Stakeholders and NGOs

The PDD using methodology ACM0002 version 10 was webhosted on the UNFCCC for global stakeholders comments as per CDM requirements. The project was webhosted from 30/11/2009 to 29/12/200.

No comments were received during this period.

3.12 Environmental impacts (133)

BVC has ensured that the Environmental Impact Assessment(EIA) was carried out by Liaoning Academy of Environmental Sciences and approved by Environmental Protection Bureau of Liaoning Province on 13/11/2008.(Code: LHSB[2008]74).

The environmental impact caused by the Project has been identified and analyzed in the PDD. By checking the EIA form, BVC is able to ensure that the impact caused by wind farm on the waste water, dust and exhaust gas, noise, solid waste and ecological impact is insignificant. All above impacts would be within an acceptable limit by carrying out corresponding mitigation measures as per the statement of the EIA form./9/

✌️ Complying with para.133/VVM, BVC hereby confirms that the Project will not have any significant impacts on the environment by means of measures of pollution avoidance and control as well as ecological recovery.

4 VALIDATION OPINION

Bureau Veritas Certification has performed a validation of Liaoning Qujiagou Wind Farm Project, in Liaoning Province, 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 on-site visit and interviews with project stakeholders; iii) the resolution of outstanding issues and the issuance of the final validation report and opinion.

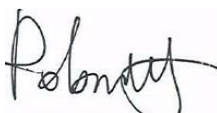
Project participants used the latest *Tool for demonstration and assessment of additionality* (version 05.2), *VVM version 01.2*, *Guidance on the demonstration and assessment of prior consideration of the CDM* (version 03) to demonstrate the additionality of the Project. In line with these tools, the PDD provides analysis of investment barriers to determine that the project activity itself is not the baseline scenario. The latest *Tool to calculate the emission factor for an electricity system* (version 02) is also applied to determine the emission factor of Northeast China Power Grid.

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 plausible 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 expected to achieve the average annual emission reductions of 106,242tCO₂e over the chosen 7-year renewable crediting period.

The review of the project design documentation (version 03) 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. Bureau Veritas Certification thus requests registration of 'project title' as CDM project activity.



(Signature of Team leader)
Name: (Jasmine) Tang Xuemei



(Signature of Internal Technical Reviewer)
Name: (Robin) Wang Jing

5 REFERENCES

Category 1 Documents:

Documents provided by Liaoning Fuxin Shenhua Xiehe Wind Power Co.,Ltd. that relate directly to the GHG components of the Project.

/1/	The PDD Version 02 available for public comments (GSP) on 30/11/2009 http://cdm.unfccc.int/Projects/Validation/DB/I01VB01YU2PRSFX1F2024VEZUA72WB/view.html
/2/	PDD version 03 dated 21/07/2010
/3/	Letter of Approval from DNA of China in Sep.2009 (No.2162)
/4/	Public information of Letter of Approval issued by NDRC: http://cdm.ccchina.gov.cn/web/NewsInfo.asp?NewsId=3888
/5/	Letter of Approval from DNA of Netherland dated 13/01/2010
/6/	Renewable Energy Law issued by NDRC of China effective from 01/01/2006. http://www.gov.cn/flfg/2005-06/21/content_8275.htm
/7/	Feasible Study Report (FSR) finalized by Liaoning Electric Power Design Institute in June 2008
/8/	Approval of the FSR issued by Development and Reform Commission of Liaoning Province dated 01/12/2008 (Code: LFGNYZ[2008] No.1153)
/9/	EIA form worked out by Liaoning Academy of Environmental Sciences in Oct.2008
/10/	Approval of the EIA issued by the Environmental Protection Bureau of Liaoning Province dated 13/11/2008 (Code: LHSB [2008] No.74)
/11/	Notification on Determining Baseline Emission Factor of China's Grid dated on 02/07/2009 http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File2333.pdf
/12/	PP's Board Meeting Minutes on 01/07/2008
/13/	Emission Reduction Purchase Agreement(ERPA) signed with Energy System International B.V.(ESI) on 16/07/2008
/14/	The signed consultant agreement of the Project dated 16/07/2008
/15/	WTG Purchase contract signed with Sinovel Wind Co.,Ltd. on 20/07/2008
/16/	Civil engineering Contract dated 20/08/2008
/17/	Construction Start Report of the Project dated 03/12/2008
/18/	Bulletin on 66 th Meeting of National CDM Board issued by China's DNA on 05/08/2009: http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File2312.doc



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/19/	Notice on Strictly Prohibiting the Installation of Thermal Generators with the Capacity of 135MW or below issued by the General Office of the State Council, Decree No. 2002 2002-6. http://www.gov.cn/gongbao/content/2002/content_61480.html
/20/	Evidence on lack of hydro source in Fuxin City http://www.studa.net/shuili/060217/0959281.html
/21/	Generation from biomass needs the support from national policies http://jjckb.xinhuanet.com/cjxw/2007-11/27/content_75467.htm
/22/	The technology development status of power generation from solar PV in China http://www.ccidreport.com/market/article/content/420/200607/135747.html http://www.chinadaily.com.cn/dfpd/yunnan/2010-05-26/content_365531.html
/23/	Data source of Benchmark (Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects issued by State Power Corporation of China in 2002)
/24/	IRR calculation spreadsheet of the Project
/25/	Maintenance Manual of SL1500 WTG issued by Sinovel Wind Co.,Ltd. in Jun.2007
/26/	China Wind Power Report 2008 published by China Environmental Science Press in Oct. 2008
/27/	Tower of WTG purchase contract dated 20/07/2008
/28/	Tariff approval issued by NDRC on 28/05/2003(Code:Fa Gai Jia Ge[2003]No.424) http://www.fc110.gov.cn/zcfg/dffg/200909/15100.html
/29/	Tariff approval issued by NDRC on 03/12/2007 (Code: Fa Gai Jia Ge [2007] No.3303) http://www.sdpc.gov.cn/jggl/zcfg/t20080218_193008.htm
/30/	Tariff approval issued by NDRC on 21/07/2008 (Code: Fa Gai Jia Ge [2008] No.1876) http://www.gov.cn/zwgk/2008-08/14/content_1071728.htm
/31/	Price regulation issued by NDRC on 20/07/2009 (Code: Fa Gai Jia Ge [2009] No.1906) http://www.sdpc.gov.cn/zcfb/zcfbtz/2009tz/t20090727_292827.htm
/32/	Tariff approval issued by the Price Bureau of Liaoning Province on 26/11/2009 (Code: Liao Jia Han[2009]126)
/33/	The Code on Compiling Feasibility Study Report of Wind Farms issued by National Development Reform Committee (NDRC) on 25/05/2005
/34/	Economic Evaluation Method and Parameters for Project Construction (version 3)
/35/	The Economics of Wind Power, Part III of Wind Energy - The Facts http://www.wind-energy-the-facts.org/en/home--about-the-project.html
/36/	Loan agreement of the Project



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/37/	Historical data of RMB loan interest rate http://www.pbc.gov.cn/detail.asp?col=462&ID=2480
/38/	Notice of Value added Tax Policy Regarding Products Using Certain Synthesized Resources and Other Products issued by the Ministry of Finance and the State Administration of Taxation on Dec. 2001 and effective from 01/01/2002
/39/	Enterprise Income Tax Law of China issued on 19/03/2007 and effective from 01/01/2008.
/40/	The evidence on increasing of the cost of materials and labors Http://www.zh818.com/Get/gangshi/20098108260.html http://www.stats.gov.cn/tjsj/ndsj/2008/indexch.htm
/41/	“Notice of National Council Issued about the Power System of Organization Reform Programme” (National issued [2002] No. 5)
/42/	Statistics of wind power installation capacity in China by the end of 2007, by Professor Shi Pengfei http://www.cwea.org.cn/download/display_info.asp?id=25
/43/	Evidence of 51 pieces of stakeholder survey questionnaires

Category 2 Documents:

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

/Ref-1/	Validation and Verification Manual Ver. 01.2 dated 30/07/2010 (Annex1,EB 55)
/Ref-2/	ACM0002 version 11 dated 12/02/2010
/Ref-3/	Tool to calculate the emission factor for an electricity system Version 02 dated 16/10/2009
/Ref-4/	Tool for demonstration and assessment of additionality Version 05.2 dated 26/08/2008 (Annex10, EB39)
/Ref-5/	Guidance on the demonstration and assessment of prior consideration of the CDM Version 03 (Annex 22, EB49)
/Ref-6/	Paragraph 54 of EB 38 th dated 14/03/2008
/Ref-7/	Glossary of CDM terms Version 05
/Ref-8/	Guidelines for the Reporting and Validation of Plant Load Factors version 01 (EB48, Annex11)
/Ref-9/	Guidance on the assessment of investment analysis version 03.1 (EB51 Annex58)
/Ref-10/	Information note on the highest tariffs applied by the executive board in its decisions on registration of projects in the People's Republic of China version 01

**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. Shane Chen, consultant
2	Mr. Zhang Han, consultant
3	Ms. Ai Fang, business manager of the PP
4	Ms. Liu Yang, vice manager in investment department of the PP
5	Ms. Li Jianhua, villager
6	Mr. Zhaoqiang, villager



6 CURRICULA VITAE OF THE DOE'S VALIDATION TEAM MEMBERS

Ms. (Jasmine) Tang Xuemei	Bureau Veritas Certification, China	<p>Team Leader, Climate Change Lead Verifier.</p> <p>She holds a Master Degree in Environmental Engineering. Before joining BV in 2008, she gained four years of CDM technical working experience in P.R China. She obtained the certificate of CDM Verifier, Lead Auditor for ISO 14001 and ISO 14064.</p>
Mr. (Tim) Wang Wei	Bureau Veritas Certification, China	<p>Team Member, Climate Change Verifier,</p> <p>He holds a Master Degree in Environmental Science. Before joining BV in Feb.2009, he gained five years of working experience in engineering and EIA for manufacturing enterprise in P.R. China. He obtained the certificates of CDM Verifier, Lead Auditor for ISO 14001 and ISO 14064.</p>
Ms. Li Yiting	Bureau Veritas Certification, China	<p>Team Member, Climate Change Verifier.</p> <p>She holds a Master Degree in Environmental Science. Before joining BV in 2009, she gained three years of CDM technical working experience in P.R China. She obtained the certificate of CDM Verifier, Lead Auditor for ISO 14001 and ISO 14064.</p>
Mr. (Robin) Wang Jing	Bureau Veritas Certification, China	<p>Technical Reviewer, Climate Change Lead Verifier.</p> <p>He holds a Bachelor Degree in Gas & Heating Engineering. He was a Gas Engineer with over 10 years' experiences in oil & gas sector and building technology in P.R. China. Before joining BV in 2007, he gained two years of CDM audit experience in P.R China. He obtained the certificate of CDM Verifier, Lead Auditor for ISO 14001 and ISO 14064.</p>

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APPENDIX A: COMPANY CDM PROJECT VALIDATION PROTOCOL

Table 1 Validation requirements based on the Validation and Verification manual 01.2 (eb55 annex 01) and methodology ACM0002 version 11 - consolidated baseline methodology for grid-connected electricity generation from renewable sources

CHECKLIST QUESTION	Ref.	§	comments		Draft Concl	Final Concl
1. Approval			COUNTRY A (China)	COUNTRY B (Netherlands)		
1.1. Has the DNA of each Party indicate as being involved in the proposed CDM project activity in section A.3 of the PDD provided a written letter of approval?	VVM	45	Yes. Letter of Approval (No.2162) in Sep. 2009 from DNA of China (Host Party) has been presented.	Yes. Letter of Approval (Reference:2009S N.353) dated 13/01/2010 from DNA of Netherlands has been presented.	OK	OK
1.2. Does the letter of approval from DNA of each Party confirm that : <ul style="list-style-type: none"> - The Party is a Party of the Kyoto Protocol - The participation is voluntary - In the case of the host Party, the proposed CDM project activity contributes to the sustainable development of the country - Refers to the precise proposed CDM project activity title in 	VVM	45	Yes. P. R. China has ratified the Kyoto Protocol on 30/08/2002, refer to http://maindb.unfccc.int/public/country.pl?country=CN According to the LoA	Yes. Netherlands has ratified the Kyoto Protocol on 31/05/2002. http://maindb.unfccc.int/public/country.pl?country=NL According to the	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments		Draft Concl	Final Concl
the PDD being submitted for registration			from DNA of China, Fuxin Shenhua Xiehe Wind Power Co., Ltd. is authorized as China's participant to voluntarily participate in and carry out the Project activity which will assist China in achieving sustainable development. The title and contents of the letter of approval refers to the precise proposed CDM project activity title in the PDD being submitted for registration.	LoA from DNA of Netherland, Energy Systems International B.V. participates in the Project on a voluntary basis. The title and contents of the letter of approval refers to the precise proposed CDM project activity title in the PDD being submitted for registration.		
1.3. Is(are) the letter(s) of approval unconditional with respect to (1.2) above?	VVM	46	Yes. It is unconditional in	Yes. It is unconditional	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments		Draft Concl	Final Concl
			P.R. China. Refer to 1.2 above	in Netherlands. Refer to 1.2 above		
1.4. Has(ve) the letter(s) of approval been issued by the respective Party's designated national authority (DNA)? Is the letter(s) of approvals valid for the proposed CDM project activity under validation?	VVM	47	Yes. National Development and Reform Commission of People's Republic of China is the DNA of China and the LoA from China is valid under validation.	Yes. The Ministry of Housing Spatial Planning and the Environment(VROM) of Netherlands is the DNA of Netherland and the LoA from Netherland is valid under validation.	OK	OK
2. Participation						
2.1. Have all project participants been listed in a consistent manner in the project documentation?	VVM	51	Yes. The project participant from host party listed in the LoA is Fuxin Shenhua Xiehe Wind Power Co.,Ltd., consistent	Yes. The project participant from Annex I party listed in the LoA is Energy Systems International B.V., consistent with that	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments		Draft Concl	Final Concl
			with that in the PDD.	in the PDD		
2.2. Does the DOE have a contractual relationship with the project participants?	VVM	51	N.A.	Yes.	OK	OK
2.3. Is the information in tabular form of section A.3 consistent with the contact details provided in Annex 1 of the PDD?	VVM	52	Yes.	Yes.	OK	OK
2.4. Has the participation of each of the project participants been approved by at least one Party involved, either in a letter of approval or in a separate letter specifically to approve participation?	VVM	52	Yes.	Yes.	OK	OK
2.5. Are any entities other than those approved as project participants included in these sections of the PDD?	VVM	52	No.		OK	OK
2.6. Has the approval of participation been issued from the relevant DNA?	VVM	53	Yes.	Yes.	OK	OK
3. Project design document						
3.1. Is the PDD used as a basis for validation prepared in accordance with the latest template and guidance from	VVM	55	Yes.	Latest Version 03.2 as per the	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
the CDM Executive Board available on the UNFCCC CDM website?			GUIDELINES FOR COMPLETING CDM-PDD, CDM-NMB and CDM-NMM – Version 07 – 02/08/2008		
3.2. Is the PDD in accordance with the applicable CDM requirements for completing the PDD?	VVM	56	Yes.	OK	OK
3.3. Does the DOE conduct a physical site visit to assess the Project? If the DOE does not undertake a physical site inspection, this should be appropriately justified.	VVM	62	Yes. The on-site visit was conducted on 19/01/2010.	OK	OK
3.4. In CDM-PDD section A.1 -Title of project -Current version number and date of document	EB 41	Ann 12	Title of the Project is “Liaoning Qujiagou Wind Farm Project”. GSP version number: 02 Date: 06/11/2009 Final Version number: 03 Date: 21/07/2010	OK	OK
3.5. In CDM-PDD section A.2, are following provided?	EB 41	Ann 12			
3.5.1. A brief description of the project activity covering purpose which includes the scenario existing prior to	EB 41 -	Ann 12	Yes. The purpose of the Project is to utilize	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
the start of project, project scenario and baseline scenario. Are there any changes/modifications compared to the web hosted PDD?	VVM	- 58 59 60	wind power with installed capacity of 49.5MW wind turbines to generate electricity which will be transmitted to the Northeast China Power Grid. The scenario existing prior to the start of the Project is the electricity generated by the Project would have been supplied by the grid, which is the same as the baseline scenario. There are no changes compared to web hosted PDD.		
3.5.2. Does the proposed CDM project activity involve the alteration of an existing installation or process?	VVM	63	No. It is a newly built project.	OK	OK
3.5.3. Explanation on how the GHG emission reductions are effected.	EB 41	Ann 12	Yes. Electricity generated from the wind resource will be delivered to the Northeast China Power Grid, replacing the power from grid-connected thermal power plants and reducing the associated GHG emissions.	OK	OK
3.5.4. The PP's views on the contribution of project activity to sustainable development	EB 41	Ann 12	Yes. The contribution of the project activity to	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
			<p>sustainable development has been specified in Section A.2 of PDD, and has been checked against the FSR and its approval and found consistent.</p> <ul style="list-style-type: none"> ✓ Reducing greenhouse gas emissions compared to a business-as-usual scenario. ✓ Diversifying power sources and mitigating the demand and supply contradiction. ✓ Helping to stimulate the growth of the wind power industry and encourage and promote the technology progress and commercial popularization of grid-connected renewable power generation projects in China. ✓ Reducing the emission of other pollutants resulting from the power generation industry in China. ✓ Creating 20 employment opportunities for local community during the operation period of the Project and creating several employment opportunities for local community during the construction period of the 		

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
			Project.		
3.6. In CDM-PDD section A.3, are following provided in the tabular format? - List of project participants and parties - Identification of Host Party - Indication whether the Party wishes to be considered as project participant	EB 41 VVM	Ann 12 51,52	Yes. The information of project participants is provided in the tabular format of PDD section A.3. P.R. China (Host Party): Fuxin Shenhua Xiehe Wind Power Co., Ltd. Netherlands (Annex I Party): Energy Systems International B.V. None of the Parties wishes to be considered as project participant.	OK	OK
3.7. In CDM-PDD section A.4.1, are following provided?	EB 41	Ann 12			
3.7.1. Physical description, location, host party(ies) and address as required. Are there any changes/modifications compared to the web hosted PDD?	EB 41	Ann 12	Yes. The Project is located in Houxinqiu Town, Zhangwu County, Fuxin City, Liaoning Province, P.R. China. There are no changes compared to the web hosted PDD.	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
3.7.2. Detailed physical location with unique identification of the project activity (e.g. Longitude/latitude)	EB 41	Ann 12	Yes. The central geographical coordinates of the project is longitude 122°50'01"E and latitude 42°34'43"N.	OK	OK
3.8. In CDM-PDD section A.4.2, is the list of categories of project activities provided?	EB 41	Ann 12	Yes Scope 1: Energy Industries (renewable sources)	OK	OK
3.9. In CDM-PDD section A.4.3, are following provided?	EB 41	Ann 12			
3.9.1. A description of how environmentally safe and sound technology, and know-how, is transferred to the Host Party(ies)	EB 41	Ann 12	Yes. There's no direct technology transfer related to the project activity since all the technology employed is from domestic manufacturers.	OK	OK
3.9.2. Further explanation of purpose of project activity with scenario existing prior to the start of project, scope or present activities and the baseline scenario. Are there any changes compared to the web hosted PDD?	EB 41	Ann 12	Yes. The Project is a newly built wind farm with 33 wind turbines installation with the unit capacity of 1.5MW. The annual net electricity delivered to the grid is 103,346MW.	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
			<p>The baseline scenario is the same as the scenario existing prior to the implementation of the project activity, i.e. generation of electricity by grid connected power plants.</p> <p>There are no changes compared to the web hosted PDD.</p>		
3.9.3. List and arrangement of the main manufacturing/production technologies, systems and equipments involved. Are there any changes compared to the web hosted PDD?	EB 41	Ann 12	<p>The Project involves the installation of 33 sets of SL1500 wind turbines with the total installed capacity of 49.5MW.</p> <p>CL-1</p> <p>The Plant Load Factor (PLF) of the Project should be specified in the PDD.</p> <p>CL-1 was closed out and the PLF of 0.238 has been specified in the PDD, which was determined in the FSR by a qualified third party contracted with the PP.</p> <p>CL-2</p> <p>The lifetime of the main equipments should be evidenced.</p> <p>CL-2 was closed out after Maintenance Manual of SL1500 WTG was provided by the PP and verified by BVC, the lifetime is</p>	CL-1 CL-2	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
			20 years as stated in this manual. Compared to the web hosted PDD, the PLF of 0.238 of the Project was added and the data source in Table 1 was updated to the purchase contracts of the equipments for the purchase contracts have been signed.		
3.9.4. The emissions sources and GHGs involved. Are there any changes compared to the web hosted PDD?	EB 41	Ann 12	Yes. To reduce CO ₂ emissions associated with thermal plants connected to Northeast China Power Grid. There are no changes compared to the web hosted PDD.	OK	OK
3.10. In CDM-PDD section A.4.4, is the estimation of emission reductions provided as requested in a tabular format?	EB 41	Ann 12	Yes. 7×3 renewable crediting periods have been chosen. Annual emission reductions of 106,242 tCO ₂ e are estimated for the first crediting period.	OK	OK
3.11. In CDM-PDD section A.4.5, is information regarding public funding provided?	EB 41	Ann 12	Yes. There is no public funding from Annex I	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
			Parties for this project, this has been confirmed by checking the FSR and its approval.		
3.12. In CDM-PDD section (Baseline identification)	EB 41	Ann 12			
3.12.1. The approved methodology and version number	EB 41 VVM	Ann 12 70	<p>Yes.</p> <p>The approved methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources” (version 10) has been applied in the web hosted PDD.</p> <p>The applied methodology ACM0002 has been updated to version 11 in PDD version 03.</p> <p>As required by ACM0002, “Tool to calculate the Emission Factor for an Electricity System (version 02)” and “Tool for the demonstration and assessment of additionality” (Version 05.2) is applied.</p>	OK	OK
3.12.2. Are the applicability conditions of the methodology met?	VVM	71	Yes.	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
3.12.2.1. This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).	ACM	0002	The Project is to install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (Greenfield plant);	OK	OK
3.12.2.2. The project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit	ACM	0002	The Project is a wind power plant.	OK	OK
3.12.2.3. In case of hydro power plants, one of the following conditions must apply: <ul style="list-style-type: none"> - The project activity is implemented in an existing reservoir, with no change in the volume of reservoir; or - The project activity is implemented in an existing reservoir, where the volume of reservoir is increased and the power density of the project activity, as per definitions given in the Project Emissions section, is greater than 4 W/m²; or 	ACM	0002	N.A.	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
- The project activity results in new reservoirs and the power density of the power plant, as per definitions given in the Project Emissions section, is greater than 4 W/m ² .					
3.12.2.4. In the case of retrofits, replacements, or capacity additions, this methodology is only applicable if the most plausible baseline scenario, as a result of the identification of baseline scenario, is "the continuation of the current situation".	ACM	0002	N.A.	OK	OK
3.12.2.5. The methodology is not applicable to the following conditions. Please confirm <ul style="list-style-type: none"> Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity Biomass fired power plants; Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m². 	ACM	0002	<p>The proposed project activity is a wind power plant and does not involve switching from fossil fuels to renewable energy at the site of the project activity.</p> <p>CL-3</p> <p>Whether the Project involves fossil fuel switching should be indicated in the PDD.</p> <p>CL-3 was closed out after "The Project involves no fossil fuel switching." Was described in the PDD.,</p>	CL-3	OK
3.13. Does the PDD correctly describe the project boundary, including the physical delineation of the proposed CDM project activity included within the project boundary for	VVM	78 79	<p>Yes.</p> <p>In the PDD B.3, the project boundary is</p>	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
the purpose of calculating project and baseline emissions for the proposed CDM project activity? Does the delineation of the project boundary include identification of all locations, processes and equipment including secondary equipment and associated processes such as logistics etc. Have changes been made to the project boundary in comparison to the web hosted PDD? If yes, please comment on the reason for the changes.			clearly identified that includes the physical, geographical site of the Project and all power plants connected physically to the Northeast China Power Grid that the Project is connected to. This is in line with the delineation of grid boundaries as provided by the DNA of China. The defined project boundary is in line with ACM0002. And all emission sources and GHGs have been included in the project boundary. There are no changes compared to the web hosted PDD.		
3.14. In CDM-PDD section B.3, are following provided? <ul style="list-style-type: none"> Description of all sources and gases included in the project boundary in the table A flow diagram of the project boundary physically delineating the project activity with all equipments, systems and flows of mass and energy etc 	VVM EB 41	80 Ann 12	Yes. Only CO ₂ emission is considered in the baseline emission. A flow diagram of the Project is provided in the PDD.	OK	OK
3.15. Is an explanation how the most plausible baseline scenario is identified in accordance with the selected baseline methodology is provided in CDM-PDD section B.4?	EB 41	Ann 12			

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
3.15.1. If the project activity is the installation of a new grid-connected renewable power plant/unit, how the most plausible baseline scenario is identified?	ACM	0002	Since the methodology ACM0002 (version 11) prescribed the baseline scenario and no other analysis is required, it is not necessary to take further steps to identify baseline scenario.	OK	OK
3.15.2. If the project activity is a capacity addition to existing grid-connected renewable power plant/unit, how the most plausible baseline scenario is identified?	ACM	0002	N.A.	OK	OK
3.15.3. If the project activity is the retrofit or replacement of existing grid-connected renewable power plant/unit(s) at the project site, how the most plausible baseline scenario is identified?	ACM	0002	N.A.	OK	OK
3.15.3.1. In step 1, have all the realistic and credible alternative baseline scenarios been identified?	ACM	0002	N.A.	OK	OK
3.15.3.2. In step 2, have the barriers that would prevent the implementation of alternative scenarios identified, and eliminated the relevant alternative scenarios?	ACM	0002	N.A.	OK	OK
3.15.3.3. Has the PP applied the step 3: investment analysis?	ACM	0002	N.A.	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
3.15.3.4. If yes, has the investment analysis been conducted against the EB41.Annex45?	ACM	0002	N.A.	OK	OK
3.16. Does the PDD identify the baseline for the proposed CDM project activity, defined as the scenario that reasonably represents the anthropogenic emissions by sources of GHGs that would occur in the absence of the proposed CDM project activity?	VVM	81	Yes. The baseline scenario is clearly identified in section B.4 in accordance with ACM0002 (version 11).	OK	OK
3.17. Has any procedure contained in the methodology to identify the most reasonable baseline scenario, been correctly applied?	VVM	82	Not applicable, as methodology ACM0002 prescribes the baseline scenario and no further analysis required, therefore, there is no need to take steps to identify the baseline scenarios.	OK	OK
3.18. Does the selected methodology require use of tools (such as the “Tool for the demonstration and assessment of additionality” and the “Combined tool to identify the baseline scenario and demonstrate additionality”) to establish the baseline scenario?	VVM	82	N.A.	OK	OK
3.19. Does the methodology require several alternative scenarios to be considered in the identification of the most reasonable baseline scenario?	VVM	83	No.	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
3.20. Are the documents and sources referred to in the PDD correctly quoted and interpreted? Are they cross checked with other verifiable and credible sources, such as local expert opinion, if available? (identify the sources)	VVM	84	N.A.	OK	OK
3.21. Have all applicable CDM requirements been taken into account in the identification of the baseline scenario for the proposed CDM project activity?	VVM	85	N.A.	OK	OK
3.22. Have all relevant policies and circumstances been identified and correctly considered in the PDD, in accordance with the guidance by the CDM Executive Board?	VVM	85	N.A.	OK	OK
3.23. Does the PDD provide a verifiable description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the proposed CDM project activity?	VVM	86	Yes. It is identified in the PDD B.4 that the baseline scenario is the following: "electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources", according to the methodology ACM0002 (version 11).	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
3.24. In CDM-PDD section B.5, are following provided?	EB 41	Ann 12			
3.24.1. Explanation and Justification of how and why this project activity is additional and therefore not the baseline scenario in accordance with the selected baseline methodology	EB 41	Ann 12	Yes. The benchmark analysis (Option III) is chosen to assess and demonstrate the additionality. Without CERs revenue, IRR of the project is lower than the benchmark of 8%.	OK	OK
3.24.2. Has the latest version of the "Tool for the demonstration and assessment of additionality" been used?	ACM	0002	Yes.	OK	OK
3.24.3. Evidence that the incentive from the CDM was seriously considered in the decision to proceed with the project activity, if the starting date of the project activity is before the date of validation.	EB 41	Ann 12	Yes. The starting date of the project activity is 20/07/2008, which is earlier than the date of global stakeholder consultation (30/11/2009). The board decision on the project investment was made on 01/07/2008. The relevant evidence has been provided and verified during the on-site visit.	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
3.25. In CDM-PDD section B.6.1, are following provided? (Algorithms and/or formulae used to determine emission reductions)	EB 41	Ann 12			
3.25.1. Explanation how the procedures, in the approved methodology to calculate project emissions, baseline emissions, leakage emissions and emission reductions are applied to the proposed project activity	EB 41	Ann 12	Yes. "Tool to calculate the Emission Factor for an Electricity System (version 02)" has been used.	OK	OK
3.25.2. Do the steps taken and equations applied to calculate project emissions comply with the requirement of the selected baseline and monitoring methodology?	VVM	89	The Project is the installation of a new grid-connected wind power. Hence, $PE_y=0$	OK	OK
3.25.3. Do the steps taken and equations applied to calculate project emissions comply with the requirement of the selected baseline and monitoring methodology, for the following types: - Greenfield renewable energy power plants - Retrofit or replacement of an existing renewable energy power plant - Capacity addition to an existing renewable energy power plant	VVM	89	$BE_y = EG_{PJ,y} \times EF_{grid,CM,y}$ For Greenfield renewable energy power plant: $EG_{PJ,y} = EG_{facility,y}$	OK	OK
3.25.4. Do the steps taken and equations applied to calculate	VVM	89	As per ACM0002 (version 11), no leakage	OK	OK

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CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
leakage comply with the requirement of the selected baseline and monitoring methodology?			emissions are considered.		
3.25.5. Do the steps taken and equations applied to calculate emission reductions comply with the requirement of the selected baseline and monitoring methodology?	VVM	89	$ER_y = BE_y - PE_y$	OK	OK
3.25.6. Have the equations and parameters in the PDD been correctly applied with respect those in the select approved methodology?	VVM	90	Yes. The steps and equations applied are consistent with ACM0002.	OK	OK
3.25.7. Does the methodology provide for selection between different options for equations or parameters?	VVM	90	Yes. Options in Step 2, 3 and 4 can be used for OM factor determination.	OK	OK
3.25.8. If yes, has adequate justification been provided and correct equations and parameters been used in accordance with the methodology selected?	VVM	90	Yes. The relevant justifications in Step 2, 3 and 4 are adequate and correct.	OK	OK
3.25.9. If data and parameters will not be monitored throughout the crediting period of the proposed CDM project activity but have already been determined and will remain fixed throughout the crediting period, - All data sources and assumptions are appropriate	VVM	91	Yes. The emission factor is determined ex ante for the Project. The equations and parameters are consistent with the official calculation of baseline emission factor	OK	OK



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<ul style="list-style-type: none"> - Calculations are correct - Be applicable to the proposed CDM project activity - Will result in a conservative estimate of the emission reductions. 			issued on 02/07/2009 by China's DNA. They are in accordance with the methodology selected.		
3.25.10. In CDM-PDD section B.6.2, are following provided? A compilation of information on the data that are not monitored throughout the crediting period but that are determined only once and thus remains fixed throughout the crediting period and that are available when validation is undertaken.	EB 41	Ann 12	Yes. Complying with "Tool-Grid EF", the necessary official data of power grid make publically by NDRC are provided in section B.2 of PDD.	OK	OK
3.25.11. Explanation and justification for the choice of the source of data	EB 41	Ann 12	Yes. The official data i.e. Notification of China Grid EF is based on the data from China Energy Statistical Yearbook and China Power Yearbook, and authorities' expertise.	OK	OK
3.25.12. Clear and transparent references or additional documentation in Annex 3	EB 41	Ann 12	Yes	OK	OK

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CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
3.25.13. Where values have been measured, a description of the measurement methods and procedures (e.g. which standards have been used), indicated the responsible person/entity having undertaken the measurement, the date of measurement(s) and the measurement results	EB 41	Ann 12	N.A.	OK	OK
3.26. In CDM-PDD section B.6.3, are following provided?	EB 41	Ann 12			
3.26.1. A transparent ex ante calculation of project emissions, baseline emissions (or, where applicable, direct calculation of emission reductions) and leakage emissions expected during the crediting period, applying all relevant equations provided in the approved methodology	EB 41	Ann 12	Yes The calculation process is in line with the steps taken prescribed in "Tool-Grid EF". The details are included in Annex 3.	OK	OK
3.26.2. Documentation how each equation is applied, in a manner that enables the reader to reproduce the calculation?	EB 41	Ann 12	Yes. Each equation is explained in the PDD, and the calculation can be reproduced.	OK	OK
3.26.3. Additional background information and or data in Annex 3, including relevant electronic files (i.e. spreadsheets)	EB 41	Ann 12	Yes. The calculation process of Emission	OK	OK

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CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
			Factor of Northeast China Power Grid has been provided in Annex 3 of PDD.		
3.27. In CDM-PDD section B.6.4 are, the results of the ex ante estimation of emission reductions for all years of the crediting period, provided in a tabular format?	EB 41	Ann 12	Yes. The results of the emission reductions for all years of the crediting period are provided in a tabular format.	OK	OK
3.28. In CDM-PDD section B.7.1, are following provided?	EB 41	Ann 12			
3.28.1.If data and parameters will be monitored on implementation and hence become available only after validation of the project activity, are the estimates provided in the PDD for these data and parameters reasonable?	VVM	91	Yes. The value of $EG_{PJtoGRID,y}$ estimated in the PDD is consistent with value in the FSR and regarded appropriate.	OK	OK
3.28.2. Specific information on how the data and parameters that need to be monitored would actually be collected during monitoring for the project activity	EB 41	Ann 12	Yes. The net electricity supplied by the Project will be calculated as $EG_{PJtoGRID,y}$, minus $EG_{GRIDtoPJ,y}$. $EG_{PJtoGRID,y}$, electricity delivered to the grid by the Project $EG_{GRIDtoPJ,y}$ electricity imported from the	OK	OK

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CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
			grid by the Project		
3.28.3. For each parameter the following below information, using the table provided:	EB 41	Ann 12			
3.28.3.1. The source(s) of data that will be actually used for the proposed project activity (e.g. which exact national statistics). Where several sources may be used, explain and justify which data sources should be preferred.	EB 41	Ann 12	N.A. No other external sources of data should be used.	OK	OK
3.28.3.2. Where data or parameters are supposed to be measured, specify the measurement methods and procedures, how the measurement is undertaken: (i) A description of the QA/QC procedures (if any) that should be applied; (ii) Where relevant: any further comment.	EB 41	Ann 12	Yes. The parameters $EG_{PJtoGrid}$ and $EG_{GridtoPJ}$ are supposed to be continuously measured and monthly recorded. A description of the QA/QC procedures has been cited.	OK	OK
3.29. In CDM-PDD section B.7.2, is a detailed description of the monitoring plan provided?	EB 41	Ann 12	Yes. A detailed description of the monitoring plan provided.	OK	OK
3.30. Are all data monitored as per monitoring methodology?	ACM	0002	Yes.	OK	OK



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3.31. Are all data collected as part of monitoring archived electronically and kept at least for 2 years after the end of the last crediting period?	ACM	0002	Yes.	OK	OK
3.32. In CDM-PDD section B.8, are following provided?	EB 41	Ann 12			
3.32.1. Date of completion of the application of the methodology to the project activity study in DD/MM/YYYY	EB 41	Ann 12	Yes The date of completion of the application of the methodology in GSP version was 06/11/2009. The date of completion of the application of the methodology in final version was 21/07/2010.	OK	OK
3.32.2. Contact information of the person(s)/entity(ies) responsible for the application of the baseline and monitoring methodology to the project activity	EB 41	Ann 12	Yes. The relevant contact information is provided.	OK	OK
3.32.3. Indication if the person/entity is also a project participant listed in Annex 1	EB 41	Ann 12	Yes. The person/entity is not project participant.	OK	OK
3.33. In CDM-PDD section C.1.1, is the project's starting date	EB 41	Ann	Yes.	OK	OK

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CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
clearly defined and evidenced?		12	20/07/2008 as identified as above, the relevant evidences have been checked.		
3.34. In CDM-PDD section D., are the conclusions and all references to support documentation of an environmental impact assessment undertaken in accordance with the procedures as required by the Host Party, if environmental impacts are considered significant by the project participants or the Host, provided?	EB 41	Ann 12	Yes. Environmental impacts are not considered significant by the project participants, as described in section D.1 of the PDD. Supporting documents, such as the EIA form completed by Liaoning Academy of Environmental Sciences and the approval by Environment Protection Bureau of Liaoning Province have been specified in the PDD.	OK	OK
3.35. In CDM-PDD section E.1, are the following provided?	EB 41	Ann 12			
3.35.1. The process by which comments by local stakeholders have been invited and compiled. An invitation for comments by local stakeholders shall be made in an open and transparent manner, in a way that facilitates comments to be received from local stakeholders and allows for a reasonable time for comments to be submitted.	EB 41	Ann 12	Yes. The process was carried out by distributing questionnaires to 51 stakeholders. The questionnaires have been provided and verified during the on-site visit.	OK	OK

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CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
3.35.2. The project activity is described in a manner, which allows the local stakeholders to understand the project activity, taking into account confidentiality provisions of the CDM modalities and procedures.	EB 41	Ann 12	Yes. The survey was conducted by distributing questionnaires.	OK	OK
3.35.3. The local stakeholder process has been completed before submitting the proposed project activity to the DOE for validation.	EB 41	Ann 12	Yes. The process was conducted during Dec. 2008 before uploading the PDD for GSP.	OK	OK
3.36. In CDM-PDD section E.2, are following provided?	EB 41	Ann 12			
3.36.1. Identification of local stakeholders that have made comments	EB 41	Ann 12	Yes. The questionnaires were distributed to the local residents near the project site.	OK	OK
3.36.2. A summary of these comments.	EB 41	Ann 12	Yes. 94% of the respondents support the implementation of the Project and 6% keeps a neutral attitude. 69% of the respondents think the Project may increase noise.	OK	OK
3.37. In CDM-PDD section E.3 is the explanation of how due	EB 41	Ann	The majority of local stakeholders are	OK	OK

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CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
account have been taken of comments received from local stakeholders provided?		12	supportive of the Project, while some stakeholders are concerned about noises. EIA form stated that the measures would be implemented to mitigate the potential environmental impact.		
3.38. In CDM-PDD Annex 1, are the following provided?	EB 41	Ann 12			
3.38.1. Contact information of project participants	EB 41	Ann 12	Yes.	OK	OK
3.38.2. For each organization listed in section A.3 the following mandatory fields: Organization, Name of contact person, Street, City, Postfix/ZIP, Country, Telephone and Fax or e-mail	EB 41	Ann 12	Yes.	OK	OK
3.39. In CDM-PDD Annex 2, is information from Parties included in Annex I on sources of public funding for the project activity which shall provide an affirmation that such funding does not result in a diversion of official development assistance and is separate from and is not counted towards the financial obligations of those Parties provided?	EB 41	Ann 12	Yes. No public funding is provided for the project activity.	OK	OK
3.40. In CDM-PDD Annex 3, is the background information	EB 41	Ann	Yes.	OK	OK

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used in the application of the baseline methodology provided?		12	The calculation of baseline emission factors in Annex 3 is consistent with the official calculation issued on 02/07/2009 by China's DNA.		
3.41. In CDM-PDD Annex 4, is the background information used in the application of the monitoring methodology provided?	EB 41	Ann 12	N.A. No further information of monitoring provided in Annex 4.	OK	OK
4. Additionality of a project activity					
4.1. General checklist for additionality					
4.1.1. Does the CDM-PDD state the latest version of the additionality tool being used?	VVM	95	Yes. "Tool for the Demonstration and Assessment of Additionality" (Version 05.2) has been used.	OK	OK
4.1.2. Were the steps taken of the "Tool for the Demonstration and Assessment of Additionality" to assess additionality used:	EB 39	Ann 10	Yes. The following steps have been taken: Step 1 Identification of alternatives to the project activity;	OK	OK

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CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
			Step 2 Investment analysis; (Step 3 -Barrier analysis is not used) Step 4 Common practice analysis.		
4.1.3. Have the following alternatives been included while defining alternatives as per sub-step 1a?	EB 39	Ann 10			
4.1.3.1. The proposed project activity undertaken without being registered as a CDM project activity;	EB 39	Ann 10	Yes. Defined as alternative II in the PDD.	OK	OK
4.1.3.2. Other realistic and credible alternative scenario(s) to the proposed CDM project activity scenario that deliver outputs services or services with comparable quality, properties and application areas, taking into account, where relevant, examples of scenarios identified in the underlying methodology;	EB 39	Ann 10	Yes. Other alternative scenarios include: I , Construction of a thermal power plant with an equivalent amount of annual electricity generation III, Construction of a power plant using other sources of renewable energy with equivalent amount of annual electricity generation	OK	OK
4.1.3.3. If applicable, continuation of the current situation (no project activity or other alternatives undertaken).	EB 39	Ann	Yes, defined as alternative IV.	OK	OK

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CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
		10	<p>The continuation of the current situation is as below:</p> <p>Provision of an equivalent amount of annual power output by Northeast China power Grid which the Project is connected to.</p>		
4.1.4. Has the outcome of Step 1a: Identified realistic and credible alternative scenario(s) to the project activity done correctly?	EB 39	Ann 10	<p>CL-4</p> <p>Further clarification is required on why power generation from solar PV and biomass is not feasible.</p> <p>CL-4 was closed out after the explanation of excluding the scenario of generation from solar PV and biomass and the evidence of the website were updated.</p>	CL-4	OK
4.1.5. Is the alternative(s) in compliance with all mandatory applicable legal and regulatory requirements, even if these laws and regulations have objectives other than GHG reductions, e.g. to mitigate local air pollution, and outcome of Step 1.b is thus concluded?	EB 39	Ann 10	<p>Alternative I is excluded according to "Notice on Strictly Prohibiting the Installation of Fuel Fired Generators with the Capacity of 135MW or below issued by the General Office of the state Council, Decree No. 2002-6".</p>	OK	OK
4.1.6. If an alternative does not comply with all mandatory	EB 39	Ann	N.A.	OK	OK

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CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
applicable legislation and regulations, has it been shown that, based on an examination of current practice in the country or region in which the law or regulation applies, those applicable legal or regulatory requirements are systematically not enforced and that noncompliance with those requirements is widespread in the country?		10			
4.1.7. Has PP selected Step 2 (Investment analysis) or Step 3 (Barrier analysis) or both Steps 2 and 3?	EB 39	Ann 10	Step 2 (investment analysis) was selected.	OK	OK
4.1.8. In step 2, have all the sub-steps as below been followed?	EB 39	Ann 10	Yes.	OK	OK
4.1.9. In sub-step 2a has the determination of appropriate method of analysis done as per the guidance as below?	EB 39	Ann 10	Yes.	OK	OK
4.1.9.1. Simple cost analysis if the CDM project activity and the alternatives identified in Step 1 generate no financial or economic benefits other than CDM related income (Option I).	EB 39	Ann 10	Yes. The Project generates economic benefits from the sale of power to the grid. Therefore, option I is not applicable.	OK	OK
4.1.9.2. Otherwise, use the investment comparison analysis	EB 39	Ann	Yes.	OK	OK



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CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
(Option II) or the benchmark analysis (Option III). Specify option used with justification.		10	Benchmark analysis (option III) instead of investment comparison analysis (option II) was used, since the baseline scenario is the continuing power supply from grid-connected plants and does not involve the new investment.		
4.1.10. Has the below guideline followed for sub-step 2b Option I. Apply simple cost analysis? Document the costs associated with the CDM project activity and the alternatives identified in Step1 and demonstrate that there is at least one alternative which is less costly than the project activity.	EB 39	Ann 10	N.A.	OK	OK
4.1.11. Has the below guideline followed for sub-step 2b Option II. Apply investment comparison analysis? Identify the financial indicator, such as IRR, NPV, cost benefit ratio, or unit cost of service most suitable for the project type and decision-making context. Please specify	EB 39	Ann 10	N.A.	OK	OK
4.1.12. Has the most suitable benchmark for the project been determined in Sub-step 2b? Which source shall the discount rates and benchmarks derived from? Please specify benchmark and justify.	EB 39	Ann 10	Yes. With reference to “Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects”, the post tax	OK	OK

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CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
			benchmark IRR of Chinese electric power industry is 8% on project, which has been widely used in feasibility study of new power plants, including wind power projects in China.		
4.1.13. Has the below guideline followed for Sub-step 2c: Calculation and comparison of financial indicators (only applicable to Options II and III)?	EB 39	Ann 10			
4.1.13.1. Calculate the suitable financial indicator for the proposed CDM project activity and, in the case of Option II above, for the other alternatives. Include all relevant costs (including, for example, the investment cost, the operations and maintenance costs), and revenues (excluding CER revenues, but possibly including inter alia subsidies/fiscal incentives, ODA, etc, where applicable), and, as appropriate, non-market cost and benefits in the case of public investors if this is standard practice for the selection of public investments in the host country.	EB 39	Ann 10	Yes All relevant costs and revenues have been considered.	OK	OK
4.1.13.2. Present the investment analysis in a transparent manner and provide all the relevant assumptions, preferably in the CDM-PDD, or in separate annexes to the CDM-PDD.	EB 39	Ann 10	Yes. The IRR spreadsheet has been provided.	OK	OK

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4.1.13.3. Justify and/or cite assumptions.	EB 39	Ann 10	All indicators are sourced from the approved FSR or the relevant rules/policies.	OK	OK
4.1.13.4. In calculating the financial/economic indicator, the project's risks can be included through the cash flow pattern, subject to project-specific expectations and assumptions.	EB 39	Ann 10	Yes. Relevant costs are included.	OK	OK
4.1.13.5. Assumptions and input data for the investment analysis shall not differ across the project activity and its alternatives, unless differences can be well substantiated.	EB 39	Ann 10	Not applicable as Option III is used.	OK	OK
4.1.13.6. Present in the CDM-PDD a clear comparison of the financial indicator for the proposed CDM activity. Please specify details for above.	EB 39	Ann 10	Not applicable as Option III is used.	OK	OK
4.1.13.7. Is the period of assessment limited to the proposed crediting period of the CDM project activity?	EB 51	Ann 58	No. The period of assessment covers the period of entire operational lifetime.	OK	OK
4.1.13.8. Does the project IRR and equity IRR calculations reflect the period of expected operation of	EB 51	Ann 58	The project IRR calculation reflects the period of expected operation of the	OK	OK

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the underlying project activity (technical lifetime), or - if a shorter period is chosen - include the fair value of the project activity assets at the end of the assessment period?			underlying project activity (1 year for construction period and 20 years for operational period).		
4.1.13.9. Does the IRR calculation include the cost of major maintenance and/or rehabilitation if these are expected to be incurred during the period of assessment?	EB 51	Ann 58	Yes.	OK	OK
4.1.13.10. Do the project participants justify the appropriateness of the period of assessment in the context of the underlying project activity, without reference to the proposed CDM crediting period?	EB 51	Ann 58	Yes. The period of assessment of 21 years is reasonable, according to "Tool for the demonstration and assessment of additionality" version 05.2.	OK	OK
4.1.13.11. Does the cash flow in the final year include a fair value of the project activity assets at the end of the assessment period?	EB 51	Ann 58	Yes.	OK	OK
4.1.13.12. Is pre-tax benchmark or post-tax benchmark applied in the investment analysis? If a post tax benchmark is applied, is the actual interest payable taken into account in the calculation of income tax?	EB51	Ann 58	The post tax benchmark is applied in the investment analysis. The loan interest payments are included as an expense in income tax calculation. CL-5	CL-5 CL-6	OK

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If yes, is the interest calculated according to the prevailing commercial interest rate in the region, preferably by assessing the cost of other debt recently acquired by the project developer and by applying a debt-equity ratio used by the project developer for investments taken in the previous three years.			<p>The PDD is silent about whether the benchmark is pre-tax or post-tax and project IRR or equity IRR.</p> <p>CL-5 was closed out after post-tax project IRR benchmark was specified in PDD.</p> <p>CL-6</p> <p>The loan interest rate and the debt-equity ratio for the Project should be specified in the PDD and evidenced.</p> <p>CL-6 was closed out after the loan agreement and historical data of RMB loan interest rates were provided and the loan interest rate and the debt-equity ratio were specified in PDD.</p>		
4.1.14.Has the below guideline followed for Sub-step 2d: Sensitivity analysis (only applicable to Options II and III)? Include a sensitivity analysis that shows whether the conclusion regarding the financial/economic attractiveness is robust to reasonable variations in the critical assumptions.	EB 39	Ann 10	<p>Yes.</p> <p>Four main variable factors are identified for sensitivity analysis of the project with a variation range from -10% to +10%.</p>	OK	OK
4.1.15.Has the outcome of Step 2 clearly mentioned with justification?	EB 39	Ann 10	Yes.	OK	OK

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CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
4.1.16. Have the barrier analysis been conducted?	EB 39	Ann 10	No.	OK	OK
4.1.17. In step 4: Common practice analysis has all the sub-steps as below followed?	EB 39	Ann 10			
4.1.17.1. Has the below guideline followed for Sub-step 4a: Analyze other activities similar to the proposed project activity? Provide an analysis of any other activities that are operational and that are similar to the proposed project activity. Other CDM project activities are not to be included in this analysis. Provide documented evidence and, where relevant, quantitative information. On the basis of that analysis, describe whether and to which extent similar activities have already diffused in the relevant region.	EB 39	Ann 10	<p>Yes.</p> <p>The criteria are:</p> <ul style="list-style-type: none"> - Projects constructed since 01/01/2002 - Wind power projects in Liaoning Province. <p>CL-7</p> <p>Further analysis on common practice is required, including the range of the comparing capacity, the defined relevant region and the data source.</p> <p>CL-7 was closed out after the range of the comparing capacity and the defined relevant region were further analyzed and the data source was specified in PDD.</p>	CL-7	OK
4.1.17.2. Has the below guideline followed for Sub-step	EB 39	Ann	Pending on CL-6	Pending	OK

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4b: Discuss any similar Options that are occurring?		10	No similar options occurred through analysis.		
4.1.18. Has the outcome from Step 4 clearly mentioned in PDD?	EB 39	Ann 10	Yes.	OK	OK
4.2. Prior consideration of the clean development mechanism					
4.2.1. Is the project activity start date prior to the date of publication of the PDD for stakeholder comments?	VVM	98	Yes The start date is 20/07/2008, which is prior to the date of publication of the PDD for stakeholder comments on 30/11/2009.	OK	OK
4.2.2. If yes, were the CDM benefits considered necessary in the decision to undertake the project as a proposed CDM project activity?	VVM	98	Yes. PP has conducted the board decision on the project investment on 01/07/2008.	OK	OK
4.2.3. Is the start date of the project activity, reported in the PDD, in accordance with the "Glossary of CDM terms", which states that "The starting date of a CDM project activity is the earliest date at which either the implementation or construction or real action of a project activity begins"?	VVM	99	Yes. The start date is the date when the equipment purchase contract was signed. It is the earliest date at which either the implementation or construction or real action of a project activity begins, which	OK	OK

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			was consistent with the latest "Glossary of CDM terms". The relevant evidence has been provided and verified during the on-site visit.		
4.2.4. Does the project activity require construction, retrofit or other modifications?	VVM	99	Yes. The Project requires construction	OK	OK
4.2.5. Is it ensured that the date of commissioning cannot be considered as the project activity start date?	VVM	99	Yes.	OK	OK
4.2.6. Is it a new project activity (a project activity with a start date on or after 02 August 2008) or an existing project activity (a project activity with a start date before 02 August 2008)?	VVM	100	It is an existing project activity, for the start date of the Project is 20/07/2008, before 02/08/2008.	OK	OK
4.2.7. For a new project, for which PDD has not been published for global stakeholder consultation or a new methodology proposed to the CDM Executive Board before the project activity start date, has it been ensured that PPs had informed the Host Party DNA and the UNFCCC secretariat in writing of the commencement of the project activity and of their intention to seek CDM status, by means of confirmation from the UNFCCC secretariat?	VVM	101	N.A.	OK	OK



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4.2.8. For an existing project activity, for which the start date is prior to the date of publication of the PDD for global stakeholder consultation, are the following evidences provided:	VVM	102			
4.2.8.1. Evidence that must indicate that awareness of the CDM prior to the project activity start date, and that the benefits of the CDM were a decisive factor in the decision to proceed with the project,	VVM	102	Yes. The FSR indicated that the CDM revenue should be considered in the Project due to the investment barrier in June 2008. And Outcome of board of directors' meeting shows that it is decided to implement the Project after taking CDM revenues into consideration on 01/07/2008.	OK	OK
4.2.8.2. Reliable evidence from project participants that must indicate that continuing and real actions were taken to secure CDM status for the project in parallel with its implementation. Has the chronology of events including time lines been appropriately captured and explained/detailed in the PDD?	VVM	102	CL-8 Further clarification is required on the continuing and real actions taken to secure CDM status for the Project. CL-8 was closed out after the detailed timeline and the relevant evidence were provided and verified.	CL-8	OK
4.3. Identification of alternatives					

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4.3.1. Does the approved methodology that is selected by the proposed CDM project activity prescribe the baseline scenario and hence no further analysis is required?	VVM	105	Yes It has prescribed the baseline scenario directly as per ACM0002	OK	OK
4.3.2. If no, does the PDD identify credible alternatives to the project activity in order to determine the most realistic baseline scenario?	VVM	105	N.A.	OK	OK
4.3.3. Does the list of alternatives given in the PDD ensure that: - One of the options that the project activity is undertaken without being registered as a proposed CDM project activity - The list contains all plausible alternatives - The alternatives comply with all applicable and enforced legislation	VVM	106	N.A.	OK	OK
4.4. Investment analysis					
4.4.1. If investment analysis has been used to demonstrate the additionality of the proposed CDM project activity , does the PDD provide evidence that the proposed CDM project activity would not be:	VVM	108	Yes.	OK	OK

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4.4.1.1. The most economically or financially attractive alternative?	VVM	108	N.A.	OK	OK
4.4.1.2. Economically or financially feasible, without the revenue from the sale of certified emission reductions (CERs)?	VVM	108	Yes Project IRR 6.45% (without CDM revenue) vs. benchmark 8%.	OK	OK
4.4.2. Was this shown by one of the following approaches?	VVM	109			
4.4.2.1. The proposed CDM project activity would produce no financial or economic benefits other than CDM-related income.	VVM	109	N.A.	OK	OK
4.4.2.2. The proposed CDM project activity is less economically or financially attractive than at least one other credible and realistic alternative.	VVM	109	N.A.	OK	OK
4.4.2.3. The financial returns of the proposed CDM project activity would be insufficient to justify the required investment.	VVM	109	Yes.	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
4.4.3. Was a thorough assessment of all parameters and assumptions used in calculating the relevant financial indicator, and determine the accuracy and suitability of these parameters using the available evidence and expertise in relevant accounting practices conducted?	VVM	111	<p>Yes.</p> <p>All parameters and assumptions are same as those in the approved FSR.</p> <p>CL-9</p> <p>All parameters used for IRR calculation should be specified.</p> <p>CL-9 was closed out after all parameters used for IRR calculation specified in PDD.</p>	CL-9	OK
4.4.4. Were the parameters cross-checked against third-party or publicly available sources, such as invoices or price indices?	VVM	111	<p>The WTG purchase contract, tower purchase contract, and the civil engineering contract have been provided and verified during the on-site visit. The relevant investment of the Project has been cross-checked against the contracts. The actual relevant investment was a little higher than the expected value in the FSR.</p> <p>CL-10</p>	CL-10	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
			Clarification is required on the suitability of value of total project cost in the investment analysis. CL-10 was closed out after the clarification on the total project cost was provided and the total project cost was cross-checked with the relevant contracts of the Project.		
4.4.5. Were feasibility reports, public announcements and annual financial reports related to the proposed CDM project activity and the project participants reviewed?	VVM	110	Yes. The FSR provided has been reviewed.	OK	OK
4.4.6. Was the sensitivity analysis by the project participants to determine under what conditions variations in the result would occur and the likelihood of these conditions assessed?	VVM	110	CAR-1 The variation limits of the four parameters which would cause the IRR reach the benchmark(8%) were not accurate enough in the sensitivity analysis. CAR-1 was closed out after the critical value of the parameters was corrected.	CAR-1	OK
4.4.7. To determine this, was it assessed whether it is reasonable to assume that no investment would be made at a rate of return lower than the benchmark by: - Assessing previous investment decisions by the project	VVM	112	Yes. The benchmark project IRR of 8% (post-tax) is widely used for power projects in China and consistent with the FSR.	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
participants involved, and - Determining whether the same benchmark has been applied, or - Determining if there are verifiable circumstances that have led to a change in the benchmark					
4.4.8. Did the project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed CDM project activities?	VVM	113	Yes. The input values are sourced from the FSR which was approved by Development and Reform Commission of Liaoning Province on 01/12/2008	OK	OK
4.4.9. If yes: (EB38 para.54)	VVM	113			
4.4.9.1. Has the FSR been the basis of the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short for the DOE to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed?	VVM	113	Yes. The FSR was available in June 2008, and the project owner made the decision to seek CERs revenue on 01/07/2008, based on the FSR. Therefore, BVC confirmed that it was unlikely in the context of the underlying project activity that the input values would have materially changed due to the short period.	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
4.4.9.2. Are the values used in the PDD and associated annexes fully consistent with the FSR? If not, was the appropriateness of the values validated?	VVM	113	Yes.	OK	OK
4.4.9.3. On the basis of its specific local and sectoral expertise, is confirmation provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision?	VVM	113	<p>CL-11</p> <p>Further clarification is required on the O&M expenses.</p> <p>CL-11 was closed out after the further clarification on the O&M expenses was specified and the evidence was further provided.</p> <p>CL-12</p> <p>Further clarification is required on how the proposed tariff has been determined for the Project.</p> <p>CL-12 was closed out after the tariff policies for wind power projects in Liaoning Province and the tariff approval of the Project were provided and verified.</p>	<p>CL-11</p> <p>CL-12</p>	OK
4.5. Barrier analysis					
4.5.1. Has barrier analysis been used to demonstrate the	VVM	115	No.	OK	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
additionality of the proposed CDM project activity?					
4.5.2. If yes, does the PDD demonstrate that the proposed CDM project activity faces barriers that: <ul style="list-style-type: none"> - Prevent the implementation of this type of proposed CDM project activity? - Do not prevent the implementation of at least one of the alternatives? 	VVM	115	N.A.	OK	OK
4.6. Common practice analysis					
4.6.1. Is this a large-scale or first-of-its kind small-scale project activity?	VVM	119	It is a large-scale project	OK	OK
4.6.2. Was common practice analysis carried out as a credibility check of the other available evidence used by the project participants to demonstrate additionality?	VVM	119	Yes. Common practice analysis was carried out in the section B.5. to assess additionality.	OK	OK
4.6.3. Was it assessed whether the geographical scope (e.g. defined region) of the common practice analysis is appropriate for the assessment of common practice related to the project activity's technology or industry type? (For certain technologies the relevant region for assessment will be local and for others it may be trans-	VVM	120	Pending on CL-7 The defined region was further analyzed.	Pending	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
national /global.)					
4.6.4. Was a region other than the entire host country chosen?	VVM	120	Yes. Liaoning Province was chosen.	OK	OK
4.6.5. If yes, was the explanation why this region is more appropriate assessed?	VVM	120	Pending on CL-7 The explanation on the defined region was provided.	Pending	OK
4.6.6. Using official sources and local and industry expertise, was it determined to what extent similar and operational projects (e.g., using similar technology or practice), other than CDM project activities, and have been undertaken in the defined region?	VVM	120	Pending on CL-7 The data source was provided by the PP and verified by BVC.	Pending	OK
4.6.7. Are similar and operational projects, other than CDM project activities, already “widely observed and commonly carried out” in the defined region?	VVM	120	Pending on CL-7 No similar and operational projects other than CDM project activities occurred.	Pending	OK
4.6.8. If yes, was it assessed whether there are essential distinctions between the proposed CDM project activity and the other similar activities?	VVM	120	Pending on CL-7 No similar and operational projects other than CDM project activities occurred.	Pending	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
5. Monitoring plan					
5.1. Is this monitoring plan based on the approved monitoring methodology applied to the proposed CDM project activity?	VVM	122	Yes. The monitoring plan based on the approved baseline and monitoring methodology ACM0002 (version 11).	OK	OK
5.2. Does the monitoring plan contain all necessary parameters?	VVM	123	Yes.	OK	OK
5.3. Are the monitoring arrangements described in the monitoring plan feasible within the project design?	VVM	123	Yes.	OK	OK
5.4. Are the means of implementation of the monitoring plan sufficient to ensure that the emission reductions achieved by/resulting from the proposed CDM project activity can be reported ex post and verified?	VVM	123	CL-13 The implementation and the calibration frequency of the meter(s) should be described clearly. CL-13 was closed out after the implementation and the calibration frequency of the meters were specified in PDD which was consistent with the methodology and the relevant rules.	CL-13	OK

VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
6. Sustainable development					
6.1. Does the CDM project activity assists Parties not included in Annex I to the Convention in achieving sustainable development?	VVM	125	Yes.	OK	OK
6.2. Does the letter of approval by the DNA of the host Party confirm the contribution of the proposed CDM project activity to the sustainable development of the host Party?	VVM	126	Yes.	OK	OK
7. Local stakeholder consultation					
7.1. Were local stakeholders (public, including individuals, groups or communities affected, of likely to be affected, by the proposed CDM project activity or actions leading to the implementation of such an activity) invited by the PPs to comment on the proposed CDM project activity prior to the publication of the PDD on the UNFCCC website?	VVM	128	Yes. As PDD described, it was conducted during Dec. 2008. The process was carried out by distributing questionnaires to 51 stakeholders.	OK	OK
7.2. Have comments by local stakeholders that can reasonably be considered relevant for the proposed CDM project activity been invited?	VVM	129	Yes.	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
7.3. Is the summary of the comments received as provided in the PDD complete?	VVM	129	Yes	OK	OK
7.4. Have the project participants taken due account of any comments received and described this process in the PDD?	VVM	129	Yes The Project Owner will take environmental protection measures to ensure that there would be no noises impact on local environment.	OK	OK
8. Environmental impacts					
8.1. Have the project participants submitted documentation on the analysis of the environmental impacts of the project activity?	VVM	131	Yes. The EIA form completed by Liaoning Academy of Environmental Sciences has been provided and verified during the on-site visit.	OK	OK
8.2. Have the project participants undertaken an analysis of environmental impacts?	VVM	132	Yes.	OK	OK
8.3. Does the host Party require an environmental impact assessment?	VVM	132	Yes.	OK	OK



VALIDATION REPORT

CHECKLIST QUESTION	Ref.	§	comments	Draft Concl	Final Concl
8.4. If yes, have the environmental impact assessment approved by local government?	VVM	132	Yes. The EIA has been approved by Liaoning Environmental Protection Bureau on 13/11/2008 with the Document code LHSB [2008] No. 74.	OK	OK

Table 2 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project owner response	Validation team conclusion
CAR-1: The variation limits of the four parameters which would cause the IRR reach the benchmark(8%) were not accurate enough in the sensitivity analysis.	4.4.6	The variation limits were rounded up to the integer part in the 2nd version of the PDD, while in the 3rd version of the PDD the variation limits are accurate to two decimal places. Consequently, the variation limits in the 3rd version of PDD are all corrected.	The critical values are corrected and accurate enough for the sensitivity analysis. Hence CAR-1 was closed.
CL-1: The Plant Load Factor (PLF) of the Project should be specified in the PDD.	3.9.3	The Plant Load Factor of the Project has been added into Section A.2 and Section A.4 of the PDD.	The PLF was determined in the FSR by a contracted third party and specified in the PDD. Hence CL-1 is closed.
CL-2: The lifetime of the main equipments should be cited and evidenced.	3.9.3	The lifetime of the main equipments has been cited in Section A.4 of the PDD and the evidence is provided.	The lifetime of the main equipments has been cited and the relevant evidence has been provided and verified. Hence CL-2 is closed.
CL-3: Whether the Project involves fossil fuel switching should be indicated in the PDD.	3.12.2.5	The Project involves no fossil fuel switching, which has been added in the revised PDD. Please refer to the B.2 of the PDD.	"The Project involves no fossil fuel switching" was specified in the revised PDD. Hence CL-3 was closed.

VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project owner response	Validation team conclusion
CL-4: Further clarification is required on why power generation from solar PV and biomass is not feasible.	4.1.4	Further clarification has been added into Section B.5 of the PDD. Biomass generation technology is still in the demonstration phase and can bring only poor economic benefits, which can't be operated without support from the national policies. For solar PV, considering the same annual electricity generation as the Project, the scenario of the Project should be a solar PV farm with an installed capacity of about 49.5 MW. Since the largest solar PV projects that had started construction in China are one project with the installed capacity of only 8 MW in 2006 and another project with the installed capacity of only 20 MW in 2010, it is not feasible to construct a solar PV farm instead of the Project	Further clarification on the feasibility of generation from solar PV and biomass has been specified. The relevant evidence was provided and verified, Hence CL-4 is closed.
CL-5: The PDD is silent about whether the benchmark is pre-tax or post-tax and project IRR or equity IRR.	4.1.13.12	It is a post-tax project IRR benchmark applied in the Project, which has been marked in the PDD.	The post-tax project IRR benchmark has been specified. Hence CL-5 is closed.
CL-6: The loan interest rate and the debt-equity ratio of the Project should be specified in the	4.1.13.12	The loan interest rate and the debt-equity ratio have been added into	The loan interest rate and the debt-equity ratio of the Project



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project owner response	Validation team conclusion
PDD and evidenced.		Section B.5 of the PDD.	have been specified in the PDD. The relevant evidence has been provided and verified. Hence CL-6 is closed.
CL-7: Further analysis on common practice is required, including the range of the comparing capacity, the defined relevant region and the data source.	4.1.17.1	The comparing capacity is more than 15MW. Liaoning Province is defined as the relevant region because the Project is approved by the provincial government, and the tariffs are government guidance pricing which vary in different provinces. And Installed Capacity of Wind Farms in China in 2007 has been provided as the database of the common practice analysis.	The range of the comparing capacity and the defined relevant region has been specified and analyzed. Installed Capacity of Wind Farms in China in 2007 by Mr. Shi Pengfei has been verified. It can be considered as the database according to the local expertise of BVC. Hence CL-7 is closed.
CL-8: Further clarification is required on the continuing and real actions taken to secure CDM status for the Project.	4.2.8.2	Detailed timeline of CDM implementation of the Project has been added into Section B.5 of the PDD and the evidences are provided.	A detail timeline of implementation has been provided and demonstrated continuing and real actions taken to secure CDM status for the Project. The relevance evidence has been provided and verified. Hence CL-8 is closed.

VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project owner response	Validation team conclusion
CL-9: All parameters used for IRR calculation should be specified.	4.4.3	The relevant parameters have been added in B.5 of the PDD.	All parameters used for IRR calculation has been specified. Hence CL-9 is closed.
CL-10: Clarification is required on the suitability of value of “total project cost” in the investment analysis.	4.4.4	The value of the “total project cost” in the investment analysis is obtained from the FSR of the Project. The FSR of the Project has been finalized by Liaoning Electric Power Design Institute. Liaoning Electric Power Design Institute is a qualified organization which has qualification Level I in design of electric power engineering. So the FSR provides reliable assessment on the total project cost of the Project. Furthermore, the total value of already signed contracts of main equipments and engineering accounts more than 93% of the total project cost estimated in the FSR. So, the value of “total project cost” in the investment analysis is suitable.	The total price indicated by the signed contracts has reached 93% of estimated value in FSR. The relevant signed contracts have been provided and verified. Hence CL-10 is closed.
CL-11: Further clarification is required on the O&M expenses.	4.4.9.3	The FSR of the Project is a reliable data source for it is compiled by Liaoning Electric Power Design Institute guided	The O&M expense has been further clarified. The evidence has been provided and verified.

VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project owner response	Validation team conclusion
		by Economic Evaluation Method and Parameters for Project Construction (version 3) published by National Development and Reform Commission and Ministry of Housing and Urban-Rural Development of the People's Republic of China, and The Code on Compiling Feasibility Study Report of Wind Farms published by National Development and Reform Commission. 77% of the O&M expenses are salary and welfare of employees, maintenance and materials. The cost of materials and labours keeps increasing in recent years, which would lead to the increase of the O&M expense.	Hence CL-11 is closed.
CL-12: Further clarification is required on how the proposed tariff has been determined for the Project.	4.4.9.3	There are four tariff policies for wind power projects in Liaoning Province issued by NDRC after November 11, 2001, Document "Fa Gai Jia Ge [2003] No. 424", Document "Fa Gai Jia Ge [2007] No. 3303", Document "Fa Gai Jia Ge [2008] No. 1876" and Document "Fa Gai Jia Ge [2009] No. 1906". According to these four tariff policies, the highest	There is no tariff higher than 0.61 RMB/kWh (including VAT) for wind power projects in Liaoning Province since 11/11/2001. The tariff of the Project was also approved by the Price Bureau of Liaoning Province. The relevant evidence has been provided and verified.



VALIDATION REPORT

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 1	Summary of project owner response	Validation team conclusion
		tariff of wind power projects in Liaoning Province is 0.61 RMB/kWh (including VAT). The tariff of the Project is demonstrated by the tariff approval of the Project. The relevant evidence has been provided to DOE.	Hence CL-12 is closed.
CL-13: The implementation and the calibration frequency of the meter(s) should be described clearly.	5.4	The electricity delivered by the Project to the grid and the electricity delivered by the grid to the Project will be measured continuously by two bidirectional meters (one as main and the other as backup) installed at the step-up substation at the project site and recorded monthly. And the calibration frequency of the meters has been added into Section B.7 of the PDD that the meters of the Project will be calibrated once a year.	The implementation and the calibration frequency of the meters have been specified in B.7 of the PDD. Hence CL-13 is closed.