



VALIDATION REPORT

“Inner Mongolia Chifeng Gaofeng Wind Power Project” in China

REPORT No. 2007-1807

REVISION No. 03

DET NORSKE VERITAS



VALIDATION REPORT

DET NORSKE VERITAS AS
CERTIFICATION

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Approved by: Michael Lehmann	Organisational unit: Climate Change Services
Client: China Fulin Windpower Development Corporation.	Client ref.: Mr. Li Gang

Project Name: Inner Mongolia Chifeng Gaofeng Wind Power Project

Country: China

Methodology: ACM0002

Version: 10

GHG reducing Measure/Technology: Wind Power

ER estimate: 150 915tCO₂e per annum

Size

☒ Large Scale

☐ Small Scale

Validation Phases:

☒ Desk Review

☒ Follow up interviews

☒ Resolution of outstanding issues

Validation Status

☐ Corrective Actions Requested

☐ Clarifications Requested

☒ Full Approval and submission for registration

☐ Rejected

In summary, it is DNV's opinion that the Inner Mongolia Chifeng Gaofeng Wind Power Project in China, as described in the PDD of 19 September 2010, meets all relevant UNFCCC requirements for the CDM and all relevant host Party criteria and correctly applies the baseline and monitoring methodology ACM0002 version 10. DNV thus requests the registration of the project as a CDM project activity.

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Report title: Inner Mongolia Chifeng Gaofeng Wind Power Project		
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Key words:

Climate Change

Kyoto Protocol

Validation

Clean Development Mechanism

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Abbreviations

BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CL	Clarification request
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNV	Det Norske Veritas
DNA	Designated National Authority
NDRC	National Development and Reform Commission
GHG	Greenhouse gas(es)
GJ	Giga joule
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal rate of return
LOA	Letter of Approval.
MP	Monitoring Plan
NGO	Non-governmental Organisation
NEPG	Northeast power grid
ODA	Official Development Assistance
O&M	Operation and maintenance
OM	Operating Margin
PDD	Project Design Document
RMB	Renminbi , Chinese currency (yuan)
UNFCCC	United Nations Framework Convention on Climate Change
SCE	Standard coal equivalent



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1 EXECUTIVE SUMMARY – VALIDATION OPINION

Det Norske Veritas Certification AS (DNV) has performed a validation of the “Inner Mongolia Chifeng Gaofeng Wind Power Project” in China. The validation was performed on the basis of UNFCCC criteria for the Clean Development Mechanism and host Party criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The review of the project design documentation and the subsequent follow-up interviews have provided DNV with sufficient evidence to determine the fulfilment of stated criteria.

The host Party is China and the Annex I Party is France. Both Parties fulfil the participation criteria and have approved the project and authorized the project participants. The DNA of China confirmed that the project assists in achieving sustainable development.

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

The project correctly applies ACM0002 version 10: “Consolidated baseline & monitoring methodology for grid-connected electricity generation from renewable sources”.

By generating renewable energy the project will displace fossil fuel based grid electricity. The project results in reductions of CO₂ emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The monitoring plan complies with the applied methodology ACM0002 version 10. The total emission reductions from the project are estimated to be on the average 150 915 tCO₂e per year over the 7-year crediting period. The emission reduction forecast has been checked, and it is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

In summary, it is DNV’s opinion that the “Inner Mongolia Chifeng Gaofeng Wind Power Project” in China as described in the PDD version 5.0 of 19 September 2010 meets all relevant UNFCCC requirements for the CDM and all relevant host Party criteria and correctly applies the baseline and monitoring methodology ACM0002 version 10. DNV thus requests the registration of the “Inner Mongolia Chifeng Gaofeng Wind Power Project” as a CDM project.



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2 INTRODUCTION

China Fulin Windpower Development Corporation has commissioned Det Norske Veritas Certification AS (DNV) to perform a validation of the Inner Mongolia Chifeng Gaofeng Wind Power Project in China. This report summarizes the findings of the initial stages of validation of the project, performed on the basis of UNFCCC criteria for CDM projects, 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 modalities and procedures and the subsequent decisions by the CDM Executive Board.

2.1 Objective

The purpose of a validation is to have an independent third party assess the project design. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant UNFCCC and host Party criteria are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the 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).

2.2 Scope

The validation scope is defined as an independent and objective review of the project design document (PDD). The PDD is reviewed against the criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology. The validation was based on the recommendations in the Validation and Verification Manual /6/.

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

3 METHODOLOGY

The validation consisted of the following three phases:

- I a desk review of the project design documents
- II follow-up interviews with project stakeholders
- III the resolution of outstanding issues and the issuance of the final validation report and opinion

The following sections outline each step in more detail.

3.1 Desk Review of the Project Design Documentation

The following table outlines the documentation reviewed during the validation:

- /1/ China Fulin Windpower Development Corporation, Project Design Document for the "Inner Mongolia Chifeng Gaofeng Wind Power Project", version 2.0 of 15 June 2007 and version 5.0 of 19 September 2010.
- /2/ Letter of Approval issued by Chinese DNA in January 2008.



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- /3/ Letter of Approval issued by DNA of France on 31 March 2008.
- /4/ The feasibility study report of Inner Mongolia Chifeng Gaofeng Wind Power Project prepared by Xinjiang Wind Power Design Institute in June 2006 and the approval letter by the Development and Reform Commission of Inner Mongolia Autonomous Region on 09 November 2006.
- /5/ The EIA of Inner Mongolia Chifeng Gaofeng Wind Power Project on 2 August 2006 and the approval letter by the Environmental Protection Bureau of Inner Mongolia Autonomous Region on 09 August 2006.
- /6/ CDM Executive Board: Validation and Verification Manual, version 1.2
- /7/ CDM Executive Board: ACM002, Approved methodology, "Consolidated methodology for grid-connected electricity generation from renewable sources", version 10.
- /8/ CDM Executive Board: *Tool for the demonstration and assessment of additionality*, version 05.2 of 16 May 2008.
- /9/ Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories.
- /10/ China Electric Power Yearbooks 1999-2006.
- /11/ China Energy statistics Yearbooks 2004-2006,
- /12/ China NDRC, the emission factor calculation for each power grid of China, published on 9 August 2007, NDRC official website:
<http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1364.pdf>
<http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1365.pdf>
- /13/ The statistics by State Electricity Regulatory Commission (SERC) on newly built thermal plants in 10th "Five-Year Plan" period 2000-2005, and NDRC official website
<http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1374.pdf>
- /14/ CDM Executive Board: Answer to DNV's request for deviation of Chinese project activities from
AM0005, received on 1 December 2005. To be found on
<http://cdm.unfccc.int/Projects/Deviations>
- /15/ The General Office of the State Council, *Notice on Strictly Prohibiting the Installation of Fuel-fired Generation with the Capacity of 135MW or below*, decree No. 2002.6.
- /16/ State Power Corporation of China. Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects. Beijing: China Electric Power Press, 2003.
- /17/ *Installed capacity of wind farm in China in 2005 (20060323 Revised Version)* by Mr. Shi Pengfei, Vice Chairman of Chinese Wind Association.
- /18/ Construction permission for the project dated 25 August 2007 issued by Chifeng Jinpeng Supervision Co. Ltd.
- /19/ Adjusted feasibility study report (AFSR) of Inner Mongolia Chifeng Gaofeng Wind Power Project prepared by Xinjiang Wind Power Design Institute on 12 March 2007.
- /20/ Introduction for Chifeng City
<http://www.chifeng.gov.cn/cfgl/zrzy.htm>
- /21/ Development of Renewable Energy
http://www.ndrc.gov.cn/xxfw/hyyw/t20070628_144686.htm
- /22/ CDM Executive Board: "Tool to calculate the emission factor for an electricity system", version 2.0.



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- /23/ The copies of the Stakeholder questionnaires of Inner Mongolia Chifeng Gaofeng Wind Power Project in July 2007.
- /24/ The Development of Windpower Equipment Market
<http://info.electric.hc360.com/2007/06/28101158551-6.shtml>
- /25/ Wind power development in Inner Mongolia
<http://cdm.ccchina.gov.cn/web/NewsInfo.asp?NewsId=1063>
- /26/ Huitengxile Wind Farm Introduction
<http://www.nwtc.cn/Article/ShowArticle.asp?ArticleID=814>
- /27/ Purchase contract for wind turbines signed between Chifeng Xinsheng Wind Power Co., Ltd. and Vestas Wind Technology (China) Co. Ltd. on 23 February 2008.
- /28/ Meeting minutes of the Board of Directors on replacing the wind turbines issued on 25 January 2007 by Chifeng Xinsheng Wind Power Co., Ltd.
- /29/ Advices on the Wind Turbine Procurement for Inner Mongolia Chifeng Gaofeng Wind Power Project by Zhongneng Power Technology Development Co. Ltd. on 13 January 2007
- /30/ Meeting minutes of the Board of Directors on applying CDM issued on 15 May 2007 by Chifeng Xinsheng Wind Power Co., Ltd.
- /31/ CDM Development Consultant Contract signed between Chifeng Xinsheng Wind Power Co., Ltd. and China Fulin Wind Power Development Co. Ltd. on 16 July 2007.
- /32/ Confirmation letter for adjusted feasibility study report of Inner Mongolia Chifeng Gaofeng Wind Power Project issued by NDRC on 10 January 2008.
- /33/ On-grid tariff list in approval document issued by NDRC, NDRC Tariff [2007]No.3303, 3 December 2007
- /34/ Training records for Inner Mongolia Chifeng Gaofeng Wind Power Project on 15 August 2007.
- /35/ Construction Contract of Wind Turbine Infrastructure for Inner Mongolia Chifeng Gaofeng Wind Power Project signed between Chifeng Xinsheng Wind Power Co., Ltd. and Inner Mongolia Coal Construction Engineering(Group) Company in 25 August 2007.
- /36/ China Wind Power Report 2008 issued by Chinese Environmental Science Publishing Company in October 2008.
- /37/ Tariff list for some wind power projects in China
<http://www.86wind.com/info/detail/37-5758.html>
- /38/ The increase of employee salaries and material costs in China
http://www.chinadaily.com.cn/hqcj/2007-09/03/content_6075777.htm
<http://info.bm.hc360.com/2007/12/03102559376.shtml>
- /39/ Chinese National Development and Reform Commission, Separate Power Plants from Network and Compete in Price to Enter Network, March, 2002,
http://www.ndrc.gov.cn/xwfb/t20050708_28096.htm
- /40/ Dali Maolin Wind Farm Project
<http://www.fsou.net.cn/html/text/lar/169071/16907181.html>
- /41/ China Wind Power Report 2008 published by China Renewable Energy Institute Association (CREIA) and WWF in October 2008.
- /42/ China NDRC and National Construction Committee, *Economic Evaluation Code and*



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Parameter for Construction Project (Version 03), 2006.

- /43/ The Statute of People's Republic of China on value added tax, 1 January 2009:
http://www.chinaacc.com/new/63_67_/2008_11_17_wa8088515201711180021980.shtml.
- /44/ Economic reform in electricity sector in year 2002:
<http://www.chinabaike.com/law/zy/xz/gwy/1333796.html>;
<http://www.chinarein.com/jcdd/zhuanjiatan/index1.htm>.
- /45/ Decree No. 70 of Guoshuifa [2003] issued by the State Administration of Taxation on 18 June 2003.
- /46/ IRR calculation spreadsheet for Inner Mongolia Chifeng Gaofeng Wind Power Project
- /47/ Guidelines on the Assessment of Investment Analysis, version 03 issued in EB 51th meeting
- /48/ Statement of the annual financial audit for Inner Mongolia Chifeng Gaofeng Wind Power Project issued by ZhongJianHua Certified Public Accountants Co. Ltd. on 8 August 2010
- /49/ Economical Assessment Method and Parameters for Construction Project (3rd edition) issued by NDRC and Ministry of Construction of China in August 2006
- /50/ The wind turbines development policy in China
<http://www.86wind.com/info/detail/4-5335.html>
- /51/ Statistics of the net electricity to the grid for Inner Mongolia Chifeng Gaofeng Wind Power Project issued by Northeast Power Grid Company on 31 December 2009
- /52/ Approved CDM projects by NDRC unit 29 February 2008
<http://cdm.ccchina.gov.cn/website/cdm/upfile/file1772.pdf>

The main changes between the version of the PDD published for the globe stakeholder consultation process and the final version of the PDD submitted for registration:

- Issues addressing the CARs and the CLs raised in this report and related to the new requirements and Guidelines from EB38-EB46 regarding financial analysis, project start date and CDM consideration.
- All of data for investment analysis was revised according to the data from the Adjusted FSR of the proposed project.
- OM and BM are updated with the most recent data for calculation of the grid emission factor available at the time of submission of PDD for validation.
- The methodology applied for the project is updated to ACM0002 (version 10) from ACM0002 (version 06) "Consolidated baseline methodology for grid-connected electricity generation from renewable sources"
- The version of *Tool for the demonstration and assessment of additionality* is updated from version 3.0 to version 5.2.
- The version of *Tool to calculate the emission factor for an electricity system* is updated to version 2.0.

3.2 Follow-up Interviews with Project Stakeholders

Representatives of the project owner, Chifeng Xinsheng Wind Power Co., Ltd. and the project consultant China Fulin Windpower Development Corporation were interviewed in China Fulin Windpower Development Corporation's Beijing office on 6 November 2007 by Tang



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Zhiang of DNV, to resolve the issues identified during the desk review of the PDD.

During the desk review, the relevant documents including FSR /4/, EIA /5/, approval letter of FSR /4/ and EIA /5/ were provided and assessed.

The project is a new build wind farm project; through the documents which the project participant provided, including PDD, FSR and EIA, DNV can confirm the project design, construction, operation and monitoring plan and all baseline scenario information. In addition, according to EIA /5/, no migration was involved in this project. The construction of the project was at beginning stage at the time of validation and no further issues can be assessed through on site visit. Thus, DNV can justify that a physical site visit for this project was not arranged during the validation process.

The main topics and the persons interviewed are summarized in the table below:

	Date	Name	Organization	Topic
/53/	2007-11-06	Mr. Cui Baohe	Chifeng Xinsheng Wind Power Co., Ltd.(project owner)	- Project background information. - Project technology, operation, maintenance and monitoring capability. - Project additionality. - Project monitoring and management plan. - Project approval status (incl. EIA approval, CDM project approval status) - Stakeholder consultation process.
/54/	2007-11-06	Ms. Hao Yufeng, Ms. Hu Fang	China Fulin Windpower Development Corporation (project consultant)	- Applicability of selected methodology. - Baseline determination. - Emission reductions calculation. - Emission reduction monitoring plan.

3.3 Resolution of Outstanding Issues

The objective of this phase of the validation was to resolve any outstanding issues which needed be clarified prior to DNV's positive conclusion on the project design. In order to ensure transparency a validation protocol was customised for the project. The protocol shows in transparent manner criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It organises, details and clarifies the requirements a CDM project is expected to meet;



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- It ensures a transparent validation process where the validator will document how a particular requirement has been validated and the result of the validation.

The validation protocol consists of three tables. The different columns in these tables are described in the figure below. The completed validation protocol for the Inner Mongolia Chifeng Gaofeng Wind Power Project is enclosed in Appendix A to this report.

Findings established during the validation can either be seen as a non-fulfilment of CDM criteria or where a risk to the fulfilment of project objectives is identified. Corrective action requests (CAR) are issued, where:

- i) mistakes have been made with a direct influence on project results;
- ii) CDM and/or methodology specific requirements have not been met; or
- iii) there is a risk that the project would not be accepted as a CDM project or that emission reductions will not be certified.

A request for clarification (CL) may be used where additional information is needed to fully clarify an issue.



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Validation Protocol Table 1: Mandatory Requirements for CDM Project Activities				
Requirement	Reference	Conclusion		
The requirements the project must meet.	Gives reference to the legislation or agreement where the requirement is found.	This is either acceptable based on evidence provided (OK), a Corrective Action Request (CAR) of risk or non-compliance with stated requirements or a request for Clarification (CL) where further clarifications are needed.		

Validation Protocol Table 2: Requirement checklist				
Checklist Question	Reference	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
The various requirements in Table 2 are linked to checklist questions the project should meet. The checklist is organised in different sections, following the logic of the large-scale PDD template, version 03 - in effect as of: 28 July 2006. Each section is then further sub-divided.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a corrective action request (CAR) due to non-compliance with the checklist question (See below). A request for clarification (CL) is used when the validation team has identified a need for further clarification.

Validation Protocol Table 3: Resolution of Corrective Action and Clarification Requests			
Draft report clarifications and corrective action requests	Ref. to checklist question in table 2	Summary of project owner response	Validation conclusion
If the conclusions from the draft Validation are either a CAR or a CL, these should be listed in this section.	Reference to the checklist question number in Table 2 where the CAR or CL is explained.	The responses given by the project participants during the communications with the validation team should be summarised in this section.	This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".

Figure 1 Validation protocol tables



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3.4 Internal Quality Control

The validation report underwent a technical review performed by a technical reviewer qualified in accordance with DNV's qualification scheme for CDM validation and verification.

3.5 Validation Team

The validation team consisted of the following personnel:

Role/Qualification	Last Name	First Name	Country	Type of involvement					
				Desk review	Site visit / Interviews	Reporting	Supervision of work	Technical review	Expert input
CDM validator (with relevant working experience) / technical team leader	Tang	Zhiang	China	√	√	√	√		√
GHG auditor	Sun	Shuyong	China	√					
Technical reviewer (applicant) (for draft report)	Kutty	Mathsy	India					√	
Technical reviewer (for draft report)	Chandrashe	Kumaraswamy	India					√	
Technical reviewer (for final report)	Yang	Weidong	USA					√	

The qualification of each individual validation team member is detailed in Appendix B to this report.

4 VALIDATION FINDINGS

The validation criteria (requirements), the means of verification and the results from validating the identified criteria are documented in more detail in the validation protocol in Appendix A.

The validation findings relate to the project design as documented and described in the revised and resubmitted project design documentation version 5.0 of 19 September 2010.

4.1 Participation Requirements

The project participants are Chifeng Xinsheng Wind Power Co. Ltd. of China and EDF Trading Limited of France. Both China as the host Party and France as the Annex I Party meet the requirements to participate in the CDM.



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The DNA of China has issued a Letter of Approval (LoA) /2/ in January 2008, authorizing Chifeng Xinsheng Wind Power Co. Ltd. as project participant and also confirmed that the project assists in achieving sustainable development.

The DNA of France has issued a LoA /3/ on 31 March 2008, authorizing EDF Trading Limited as project participant.

DNV has received from the project participant the LoAs /2//3/ issued by the DNA of China and the DNA of France, respectively. By checking the link from DNA of China /52/, DNV can confirm the authenticity and validity of LoA from China. During the course of the validation DNV has not found elements to doubt the authenticity of the LoA from France. Thus, DNV considers that these LoAs are in accordance with the paragraphs 45-48 of the Validation and Verification Manual version 1.2 /6/.

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

4.2 Project Design

The project involves the installation and operation of 25 wind turbines in the Songshan District, Chifeng City, Inner Mongolia Autonomous Region of China. The geographical coordinates are: east longitude 118°43'26", and northern latitude 42°23'2". The installed capacity of each wind electricity generator (WEG) unit is 2 MW, thus constituting a total generation capacity of 50 MW. The wind turbines will be supplied by Vestas Wind Technology (China) Co. Ltd., while the turbine technology is introduced from Denmark /19/.

The project's system boundaries are clearly defined as the Northeast Power Grid (NEPG) /12/, which is in line with the delineation of the grid boundaries regulated by DNA of China.

Being a renewable electricity project, the project activity will generate greenhouse gas (GHG) emission reductions by avoiding CO₂ emissions from electricity generation by fossil fuel power plants.

The issuance date of the construction permission for Inner Mongolia Chifeng Gaofeng Wind Power Project was 25 August 2007 /18/, which is defined as the starting date of the project activity. According to the project Adjusted Feasibility Study Report (AFSR) /19/, the expected operational lifetime of the project activity is 20 years. A renewable crediting period of 7 years has been chosen for the project, starting from 1 June 2010. The emission reductions are estimated to be 150 915 tCO₂e per year and 1 056 405 tCO₂e over the seven-year crediting period.

The project description is to the consideration of DNV complete and accurate.

4.3 Baseline Determination

The project applies the approved baseline methodology ACM0002 (version 10), titled "Consolidated methodology for grid-connected electricity generation from renewable sources" /7/.

The applicability of this methodology is justified since:

- The project is a wind farm project with the installation capacity of 50 MW, which has been confirmed from the adjusted FSR /19/.
- The electricity from the project activity is proposed to be supplied to the Northeast Power Grid (NEPG), and information on the characteristics of NEPG can be clearly



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identified /12/;

- The project is a new wind farm power plant with installed capacity of 50MW and does not involved in switching from fossil fuels to renewable energy sources at the site of the project activity, as confirmed by the adjusted FSR /19/.

The project boundary is clearly defined as the site of project activity and the system boundary is defined as the NEPG of China, including Heilongjiang, Jilin and Liaoning power grid/12/. There are no significant transmission constraints between the power plants of the NEPG grid, nor with the proposed project.

Emission sources and gases included in the project boundary are:

	<i>GHGs involved</i>	<i>Description</i>
<i>Baseline emissions</i>	<i>CO₂</i>	<i>The northeast power grid</i>
<i>Project emissions</i>	<i>N/A</i>	<i>Project emission is regarded as zero as the project is a renewable energy (wind source) project.</i>
<i>Leakage</i>	<i>N/A</i>	<i>There are no leakages that need to be considered in applying this methodology.</i>

The selected sources and gases are justified for the project activity.

The alternative baseline scenarios have been identified as below:

- 1) The proposed project activity undertaken without being registered as a CDM project activity;
- 2) A fossil fuel-fired power plant with the comparable capacity or electricity generation;
- 3) A power plant using other source of renewable energy with the comparable capacity or electricity generation, such as PV, biomass and hydro, etc;
- 4) Comparable capacity or electricity generation addition provided by the NEPG.

DNV considers the list of realistic and credible alternatives to be complete.

Alternative – 1: The proposed project activity undertaken without being registered as a CDM project activity: This is a realistic and credible alternative available to the project developer but this cannot be considered as baseline scenario. This alternative faces financial barriers (as presented below in the additionality discussion, section 4.4).

Alternative – 2: A fossil fuel-fired power plant with the comparable capacity or electricity generation: This is not consistent with the regulation “Notice on Strictly Prohibiting the Installation of Thermal Power Generation Units with the Capacity of 135 MW or below”/15/. The equivalent amount of annual electricity generation from capacity 50 MW wind farm is less than from the thermal power plant. In other words, the thermal power plant capacity with equivalent power generation must be less than 50 MW which is much less than 135 MW. Therefore, this alternative can be excluded.

Alternative – 3: A power plant using other source of renewable energy with the comparable



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capacity or electricity generation, such as PV, biomass and hydro, etc: The project region belongs to water resources shortage area in Chifeng City, so no economically exploitable water resources exist in project site /20/. Due to the technology development status and the high cost for power generation, solar PV, geothermal and biomass faces the difficulties and barriers /21/. Therefore, other sources of renewable energy are not feasible and excluded. All relevant evidences were referenced in PDD and verified by DNV.

Based on above discussion, DNV was able to confirm that the only plausible baseline scenario is 4): Comparable capacity or electricity generation addition provided by the NCPG. In the baseline scenario the electricity delivered from the project activity to the grid would have been generated by fossil fuels grid-connected power plants and by the addition of new generation sources.

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

The baseline determination is transparent and reasonable.

4.4 Additionality

The additionality of the project has been established using the “*Tool for the demonstration and assessment of additionality*” version 05.2 approved by the CDM-EB /8/.

The starting date of the project is 25 August 2007, which is the issuance date of the construction permit /18/. DNV was able to confirm that the starting date was defined properly, as it was the earliest among the implementation, construction date or real action of the project, compared with Construction Contract of Wind Turbine Infrastructure for Inner Mongolia Chifeng Gaofeng Wind Power Project signed between Chifeng Xinsheng Wind Power Co., Ltd. and Inner Mongolia Coal Construction Engineering(Group) Company on 25 August 2007 /35/ and purchase contract for wind turbines signed between Chifeng Xinsheng Wind Power Co., Ltd. and Vestas Wind Technology (China) Co. Ltd. on 23 February 2008 /27/.

4.4.1 CDM consideration and continued action to secure CDM status

- The initial feasibility study report of Inner Mongolia Chifeng Gaofeng Wind Power Project was prepared in June 2006 and was approved by the Development and Reform Commission of Inner Mongolia Autonomous Region on 9 November 2006. In the FSR, the total capacity for the project is 49.3 MW with 58 wind turbines (each with 850 kW) /4/.
- On 25 January 2007, the project participant decided to change the type of wind turbine to the capacity of 2MW each /28/ due to the demand of the wind turbines with the capacity of 850 KW is larger than supply in the market, which is evidenced by the document Advices on the Wind Turbine Procurement for Inner Mongolia Chifeng Gaofeng Wind Power Project supplied by tendering company on 13 January 2007 /29/.
- The Adjusted Feasible Study Report (AFSR) was prepared by Xinjiang Wind Power Design Institute on 12 March 2007 and the project developer was suggested to consider CDM benefit /19/.



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- On 15 May 2007, the meeting minutes of the Board of Directors on applying CDM was issued by Chifeng Xinsheng Wind Power Co., Ltd. /30/.
- On 16 July 2007, CDM Development Consultant Contract was signed between Chifeng Xinsheng Wind Power Co., Ltd. and China Fulin Wind Power Development Co. Ltd. /31/.
- On 25 August 2007, PDD was webhosted on DNV's climate change website.
- On 25 August 2007, the construction permit was issued by Chifeng Jinpeng Supervision Co. Ltd. /18/ and the project started.
- On 25 August 2007, Construction Contract of Wind Turbine Infrastructure for Inner Mongolia Chifeng Gaofeng Wind Power Project was signed between Chifeng Xinsheng Wind Power Co., Ltd. and Inner Mongolia Coal Construction Engineering(Group) Company /35/.
- On 10 January 2008, confirmation letter for adjusted feasibility study report of Inner Mongolia Chifeng Gaofeng Wind Power Project was issued by NDRC /32/.
- In January 2008, Chinese LoA was issued by Chinese DNA /2/.
- On 23 February 2008, purchase contract for wind turbines was signed between Chifeng Xinsheng Wind Power Co., Ltd. and Vestas Wind Technology (China) Co. Ltd. /27/.
- On 31 March 2008, French LoA was issued by DNA of France /3/.

By assessing the above evidences DNV was able to confirm that the incentive from CDM was seriously considered in the decision to implement the project activity and continued action to secure CDM status were taken.

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

The alternative baseline scenarios for the project activity have been suitably identified as,

- 1) The proposed project activity undertaken without being registered as a CDM project activity;
- 2) A fossil fuel-fired power plant with the comparable capacity or electricity generation;
- 3) A power plant using other source of renewable energy with the comparable capacity or electricity generation, such as PV, biomass and hydro, etc;
- 4) Comparable capacity or electricity generation addition provided by the NCPG.

As mentioned in Section 4.3 alternative 2) and 3) are not realistic and credible alternatives and can be exempted from further consideration.

4.4.3 Investment analysis: Choice of approach

As the proposed project generates financial and economic benefits other than CDM related income through the sales of electricity and the alternative to the project does not involve an investment, a benchmark analysis (option III) was selected for conducting the investment analysis.

4.4.4 Investment analysis: Benchmark selection

According to the *Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects* /16/, in China an IRR of 8% (after tax) for the total investment of a project is regarded as a benchmark for investing in large scale hydropower plants, fossil fuel fired



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plants as well as wind farm projects. The benchmark of 8% (after tax) is therefore appropriate for this project. DNV was able to confirm this is suitable and reasonable as following:

1. This benchmark was determined by the national administration of this industry in China/16/ ;
2. This benchmark is for project and after tax and the investment analysis for this project will be for project and after tax also;
3. This *Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects* /16/is referred to the risk premiums of large scale wind farm power project.

4.4.5 Investment analysis: Input parameters

A FSR in China is required to be developed by a third party accredited for this task directly by the government. An approval letter of the FSR is issued by the government only after it passes the public assessment of the sector experts designated by the government. It is in DNV's opinion that FSR can be regarded as an accurate and trustworthy source of information coming from a recognized entity once it has the approval letter from the government.

All the parameters used in the financial analysis have been sourced from the AFSR (adjusted feasibility study report) prepared by Xinjiang Wind Power Design Institute on 12 March 2007/19/, which can thus be considered information provided by an independent and recognized source. DNV was able to verify the expected tariff indicated in the AFSR and confirm that this tariff is consistent with the value derived from approval document issued by NDRC/33/, and thus this parameter applied is deemed reasonable.

DNV compared the input parameters for the financial analysis included in the PDD with the parameters stated in the AFSR prepared by Xinjiang Wind Power Design Institute on 12 March 2007/19/, and was able to confirm that the values applied are consistent with the values stated in these documents.

The AFSR was prepared on 12 March 2007/19/ and thus only 5 months prior to the decision to proceed with the project activity (i.e. the start date of the project) which was on 25 August 2007/18/. Given this relatively short period of time between the AFSR and the decision to proceed with the project activity it is unlikely in the context of the project that the input values would have materially changed and that it is thus reasonable to assume that the AFSR has been the basis of the decision to proceed with the investment in the project.

The input parameters used in the financial analysis were compared with the data reported for other similar proposed CDM projects developed in Inner Mongolia and validated by DNV, by comparing the investment costs per MW, electricity tariff, percentage of O&M costs relative to total investment costs. The following table illustrates the comparison of investment cost per MW, annual power generation and percentage of O&M costs relative to total investment costs between the proposed project and the registered CDM projects in the same region East Inner Mongolia.

Table: Comparison of investment cost per MW, plant load factor and percentage of O&M costs relative to total investment cost between wind power projects in East Inner Mongolia

Reg. No.	Investment cost per	Plant load	Percentage of O&M costs relative to total investment
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		MW (RMB/MW)	factor	cost
Inner Mongolia Chifeng Dongshan 49.3MW Wind Power Project	0689	10 445 233	28%	1.7%
Inner Mongolia Chifeng Saihanba West 30.6 MW Wind Farm Project	0994	9 491 176	28%	2.3%
Inner Mongolia Wudaogou 50.25MW Wind Power Project	1487	9 406 169	28%	2.4%
Inner Mongolia Sunjiaying 50.25MW Wind Power Project	1488	10 072 836	27%	2.4%
Inner Mongolia Dali Phase IV 49.5MW Wind Power Project	1628	11 049 495	28%	4.0%
Inner Mongolia Dali Phase V 49.5MW Wind Power Project	1629	11 719 192	25%	2.3%
Inner Mongolia Chifeng Bolike 50MW Wind Power Project	1830	10 372 400	28%	1.7%
Inner Mongolia Chifeng Dongshan Phase II 50MW Wind Power Project	1869	10 180 200	28%	1.6%
Inner Mongolia Chifeng Gaofeng Wind Power Project		9 386 200	30%	3.46%

1) Annual Power Generation

To assess the appropriateness of the assumed annual power generation, the plant load factor was chosen for comparison. The comparison showed that the annual load factor (30%) of the proposed project is larger than those values (25% to 28%) of the similar projects in the same region in East Inner Mongolia. So the annual load factor of proposed project is conservative.

Annex 11 of CDM-EB 48th meeting report provides a guideline for validation of plant load factor for renewable energy. One option is to use plant load factor provided to the government while applying the project activity for implementation approval. The Adjusted FSR has this purpose and hence according to current CDM regulation, the checking that the value is in line with the Adjusted FSR should be considered sufficient for validation of plant load factor /4/. This was the case for his project.

Moreover, the plant load factor is derived from the Adjusted FSR prepared by Xinjiang Wind Power Design Institute which is an independent third party accredited by the Chinese government. The plant load factor is estimated by the wind source data over the past 30 years in Adjusted FSR /19/. Hence the plant load factor of the project can be considered information provided by a trustworthy and recognized source. DNV can thus confirm that the plant load factor has been validated as per the requirements of EB48 Annex 11. Since the plant load factor will affect and determine the annual grid-connected output directly, it was able to



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confirm by DNV that the assumed annual grid connected output from the Adjusted FSR is appropriate and acceptable.

2) Tariff

A reform for the electric power system in China, the Electric Power System Reform, was issued by the China State Council in 2002 which led to a diversification in the ownership of power generation and the tariff reform. In order to promote market competition, the electric power generation and electricity grid operation was divided into different sectors. After 2002 the power companies and grid were separated to be more market oriented, but before 2002 the projects enjoyed higher price than the present project ^{/39/}. After the reform in 2002, such high tariffs could no longer be obtained. Therefore, it is DNV's opinion that only the projects after 2002 in East Inner Mongolia, where the project is located, were comparable to the proposed project.

DNV verified the tariff list for the wind projects in East Inner Mongolia since 2002 contained in the PDD and could confirm that the list is complete and the tariff keeps stable (RMB 0.54/KWh, including VAT) except for the following projects:

- a. Dali Maolin Wind Farm (tariff is RMB 0.76/KWh, including VAT) is a demonstration project and operated in a different economic environment, as in the very early stages of the wind power development in China this project received government aid as demonstration project ^{/40/}. This situation is no longer relevant for the current wind sector in Inner Mongolia, and the demonstration project is thus not comparable to the proposed project.
- b. Two models for determining the tariff of wind power projects exist in China, namely through tendering process or approval by the government. The latter is commonly applied in China. Huandian Tongliao Beiqinghe 300 MW wind farm project (tariff is RMB 0.5216/KWh, including VAT) is a concession project in East Inner Mongolia installed in 2008. The tariff of this project was determined through tendering process ^{/41/}, resulting in a slightly lower tariff. Hence, this project is not comparable to the project.

The tariff value for the project used in AFSR is RMB 0.54/KWh (including VAT), which is approved by the government ^{/33/}. So, DNV confirms the tariff in East Inner Mongolia has been stable and the tariff used in AFSR is reasonable.

3) Total investment costs and O&M costs

The investment cost used in the financial analysis were compared with the data reported for other similar proposed CDM projects in the region, i.e. other wind power projects in East Inner Mongolia. The investment costs per MW for the project were found to be smaller than the range of 9 406 169 RMB /MW to 11 719 192 RMB/MW of those compared projects.

The investment costs estimated were further cross checked against actual costs in the signed wind turbines purchase contract, which is the main part of total investment (about 85% of the statistic total investment). The actual cost for the wind turbines purchase in the contract is



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RMB 443 381 504 /27/, which is 11% more than the estimated value (RMB 399 980 200) in AFSR /19/. Therefore, DNV could confirm that the total investment in the AFSR is reasonable and conservative.

The O&M costs for wind power projects may vary by site location, conditions for transportation, applied technology, number of turbines and regional inflation. As shown in the table above, the proposed project is deemed to have a similar percentage of O&M costs relative to investment costs for similar wind power projects located in the Eastern Inner Mongolia, and enable DNV to confirm that the O&M cost of the proposed project relative to investment costs 3.46% is reasonable.

The proposed project is located around Chifeng City in Eastern Inner Mongolia. The project activity has a total static investment of 469 310 000 RMB¹ and annual average O&M costs of 16 233 200 RMB/19/. DNV has compared annual the O&M costs relative to investment costs of the proposed project with the wind power projects (UNFCCC ref. 0561, 0576, 0689, 0994, 1487, 1488, 1628, 1629, 1830, 1869, 2381, 2615, 2617, 2811, 3105, 3116, 3325) in Chifeng city.

The annual O&M costs relative to investment costs of the proposed project are 3.46%, which is within the range (1.59% - 4.01%) of wind power projects in Chifeng city (Similarly, for wind power projects in East Inner Mongolia the range of annual O&M costs relative to investment costs is 1.6% - 4.0%).

Because the type of wind turbine used for the proposed project is Vestas V80-2000, which is rare in the Chifeng area and the project owner has less experiences for it, the value of annual O&M costs relative to investment costs of the proposed project (3.46%) is in the upper range when compared to other projects (1.59% - 4.01%).

DNV has also compared the proposed project with another similar wind power project (UNFCCC ref. 3325) using the same type of wind turbine. The value of annual O&M costs relative to investment costs of project no. 3325 is 3.6%, which is a little higher than the proposed project. Therefore the value of annual O&M costs relative to investment costs of the proposed project is reasonable.

Compared Data	Proposed Project (ref. no. 3439)	Project ref. no. 3325	Compared Value in Chifeng		UNFCCC Reference
Annual O&M cost relative to total investment cost	3.46%	3.6%	Max	4.01%	1628
			Min	1.59%	1869

Moreover, DNV has cross checked the actual annual O&M cost in 2009/48/ of the proposed project and the value is 21 530 000 RMB, which is much higher than the value (16 233 200 RMB) of the proposed project annual O&M costs of the proposed project estimated in AFSR and used in the financial analysis. Therefore, DNV confirms that the annual O&M costs used in the financial analysis of the project activity is conservative although it is in the upper range when compared to other similar projects in the Chifeng area.

4) Other expense



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The term “other expense” refers to additional production expenses, administrative expenses and operating expenses, except depreciation, maintenance, insurance, material, salary and welfare. This definition was derived from the document “Economic Evaluation Method and Parameters for Project Construction” /42/ which was considered as the financing assessment basis and source for preparing the AFSR. DNV can confirm the “other expense” identified in the AFSR is appropriate and it is in line with the relevant regulation for designing FSR in China.

DNV has checked and found that the “other expense” (40 RMB/kW) of the proposed project used in the investment analysis is within the range of the “other expense” (10~50 RMB/kW) for the registered CDM projects of a similar scale in China.

Furthermore, it should be noted that even if “other expense” were assumed to be zero, the project IRR without CER revenue would be 7.46%, which is still lower than the benchmark of 8%.

5) Taxes

According to the current law in China, The Statute of People's Republic of China on value added tax, the VAT is defined as 17% for wind power industry /43/. In order to encourage the development of wind powers in China, the Ministry of Finance and State Administration of Taxation provides tax reduction for wind power projects which is 8.5% /44/.

The income tax in AFSR is 0% in first two years, 15% in following three years and 33% in other years, which is in line with other wind power projects in East Inner Mongolia. The depreciation rate is 6% and residual value is 5%, which is in line with the government document of Decree No. 70 of Guoshuifa [2003] issued by the State Administration of Taxation on 18 June 2003 /45/.

As per Guidelines on the Assessment of Investment Analysis, version 03 issued in EB 51st meeting /47/, the actual interest payable is taken into account in the calculation of income tax.

By in addition applying our sectoral competence, DNV was able to confirm that the input parameters used in the financial analysis are reasonable and adequately represent the economic situation of the project.

4.4.6 Investment analysis: Calculation and conclusion

The IRR calculations were provided in a spreadsheet /46/. The calculations were verified and found to in line with EB's guidance on investment analysis. The assumptions used in the calculations were deemed to be correct by DNV. The project-IRR over 20 years without CDM revenues is 7.61%, which confirms that the project in the absence of CDM benefits and compared to the benchmark of 8% is not financially attractive.

4.4.7 Investment analysis: Sensitivity analysis

Moreover, a sensitivity analysis has been carried out for parameters contributing more than 20% to revenues or costs to check the robustness of the financial analysis. Reasonable variations of the static total investment, annual O&M costs, on-grid tariff and annual supplied power were checked by calculating the variation necessary to reach the benchmark and then discussing the likelihood for that to happen. None of the parameters in the sensitivity analysis are considered to have any significant positive correlation.

Static total Investment	O&M Costs	on-grid tariff	annual supplied power
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-2.5%	-11.4%	+ 2.55%	+ 2.55%
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It is shown that the benchmark is reached only when the total investment and O&M decreases by 2.5% and 11.0% respectively, while the on-grid tariff and annual supplied power increase by 2.55%. However, it is unlikely that these situations will happen as demonstrated in the following:

As the main part of total investment cost, the equipment and materials are currently increasing /24/, which was confirmed by DNV. Hence, the total investment cost is unlikely to decrease by 2.5%.

The O&M cost includes maintenance fee, salary and welfare fee, material and other cost, insurance fee/49/, which are mainly affected by the human resource costs, the material costs and the cost of maintenance parts of wind turbines. Both the human resource costs and the material costs are rising in China in recent years /38/. Because the wind turbines demand exceeds supply in the world/50/, the cost of maintenance parts of wind turbines is rising as well. Hence, the O&M cost is increasing in China. Moreover, DNV has cross checked the actual O&M cost of the proposed project in 2009 /48/ and the value is 21 530 000 RMB, which is much higher than the value (16 233 200 RMB) of annual O&M costs of the proposed project estimated in the AFSR. Therefore, it is unlikely that O&M cost reduces more than 11.4% in the crediting period.

The electricity tariff keeps stable from 2002 in East Inner Mongolia region in China /36/. Therefore, it is deemed unlikely that the tariff can increase by 2.55% to make the project IRR reach the benchmark.

The IRR of the project will reach the benchmark if the PLF increased by 2.55%. The average wind speed tends to decrease over the past 30 years /4/. Therefore, the probability that PLF is 2.55% higher than the estimated value is very small. The adjusted feasibility study report (AFSR) for Inner Mongolia Chifeng Gaofeng Wind Power Project, prepared by Xinjiang Wind Power Design Institute on 12 March 2007, analyzes the local wind speed from 1976 to 2005. The AFSR clearly states that the 30-year average wind speed from 1976 to 2005 is 4.1 m/s, the 20 year average wind speed from 1986 to 2005 is 4 m/s and the 10 year average wind speed from 1996 to 2005 is 3.96 m/s. Therefore, the local wind speed of the proposed project is decreasing steadily. Moreover, DNV has also cross checked the actual net electricity to the grid in 2009/51/, which is 128 720 MWh and it is 2.26% lower than the estimated value (131 700 MWh) in the AFSR. Therefore, the probability that PLF increase by more than 2.55% is low.

The sensitivity analysis shows that even if considering the reasonable variations of those critical parameters, without the income from CERs sales, the “Inner Mongolia Chifeng Gaofeng Wind Power Project” is unlikely to be the most financially attractive option.

4.4.8 Common practice analysis

In China, most of wind power projects are approved by the provincial government; electricity price and regulations are usually similar for wind power projects in the same province. Thus, it is reasonable for Inner Mongolia Autonomous Region (which is the location of the project and is a provincial level area in China) to be selected as the geographical scope for the common practice analysis of the project. Wind farm projects of similar scale (25 to 75 MW) in Inner Mongolia Autonomous Region are discussed in the common practice analysis. In the identified project list /17/, Dali wind farm project was supported by national debt special fund



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/25/; Huitengxile wind project is supported by soft loan from Denmark government and supported by State Economic and Trade Commission as a demonstration project /26/. Other projects have all considered CDM revenues as they faced similar investment barrier and financial unattractiveness, and have been registered as CDM projects successfully. The references of the listed similar projects have been verified and deemed to be reliable. Therefore the project activity cannot be said to represent common practice.

In summary, this project is not financially attractive and common practice. It would not be constructed if no benefit from CDM. DNV can confirm all assumptions and analysis as well as the information source. Hence, the project can reduce anthropogenic emissions of greenhouse gases by sources below those that would have occurred in the absence of the registered CDM project activity.

4.5 Monitoring

The monitoring methodology selected complies with the requirements of ACM0002 version 10 "Consolidated monitoring methodology for grid-connected electricity generation from renewable sources" /7/.

The monitoring plan is in accordance with the monitoring methodology. The monitoring plan will give opportunity for real measurements of achieved emission reductions..

4.5.1 Parameters determined ex-ante

The combined margin emission factor is determined *ex-ante* based on the most recent information available; the detailed calculations of the combined margin emission factor are described in the following section 4.6. The parameters are listed in the table below:

<i>Data and Parameters</i>	<i>Unit</i>	<i>Ex-ante Determined Value</i>
Operating margin of NEPG (OM)	tCO ₂ /MWh	1.2402
Build Margin of NEPG (BM)	tCO ₂ /MWh	0.8632
Emission factor of NEPG	tCO ₂ /MWh	1.1459

4.5.2 Parameters monitored ex-post

The parameter monitored *ex-post* is the net electricity generation from the proposed project activity.

The net electricity generated from the project will be measured hourly and recorded monthly. This data will be cross verified against the sales invoice from the grid.

4.5.3 Management system and quality assurance

The project's monitoring plan includes:

- Management Structure and Training
- Calibration and Arrangement of Meters
- Monitoring Parameters
- Data Recording



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- Monitor Practice
- Quality assurance and Quality control
- Data Management System
- Verification and Monitoring Results

The accuracy, calibration interval of monitoring meters and QA&QC procedures has been stipulated in PDD. All data including calibration records will be kept until 2 years after the end of the crediting period. The detailed procedures are documented in the PDD. DNV can confirm that the monitoring plan is appropriate and consistent with ACM0002. Further, the monitoring plan will give opportunity for real measurements of achieved emission reductions. The application of the monitoring methodology is transparent and DNV considers the project participants able to implement the monitoring plan.

4.6 Estimate of GHG Emissions

The emission reduction ER_y by the project activity during the crediting period is the difference between baseline emissions (BE_y), project emissions (PE_y) and emissions due to leakage (L_y), as follows:

- (1) Baseline emissions (BE_y in tCO_2) are the product of the baseline emissions factor (EF_y in tCO_2/MWh) times the electricity supplied by the project activity to the grid (EG_y in MWh).
- (2) Project emissions: There are no emissions from the project which is a renewable energy project.
- (3) Leakage: No leakage has to be considered for the proposed project activity.

The baseline emission factor for the project is determined *ex-ante* as a combined margin for the 7 years crediting period, consisting of combination of the operating margin (OM) and build margin (BM) according to “Tool to calculate the emission factor for an electricity system” of version 2.0 /22/.

The PDD was published in August 2007, and the calculation of the grid emission factor has been updated to the latest data which was available at the commencement of validation. The data used in the EF (Emission Factor) calculation is in accordance with data in the China Electric Power Yearbook from 2002 to 2006 (published annually) /10/ and the China Energy Statistical Yearbook from 2004 to 2006 /11/.

According to the data from China Electric Power Yearbook 2002-2006 /10/, the low-cost/must-run resources constitute less than 50% of the total grid generation from 2001 to 2005. Therefore, the OM is justified to calculate using the “simple OM” method. The aggregated generation and fuel consumption data have been used due to the fact that more disaggregated data are not available in the NEPG. Country specific data for net calorific value (NCV_i) of each type of fossil fuel/11/, the IPCC 2006 default values for emission factor and oxidation factor of each type of fossil fuel/9/ and the total electricity delivered to the NEPG have been selected and are deemed reasonable/19/. Vintage data for the years 2003, 2004 and 2005 from China Energy Statistics Yearbooks and China Electric Power Yearbooks 2004-2006 editions/10//11/ have been used for operating margin calculation. The OM is calculated to be $1.2402 \text{ t CO}_2 / \text{MWh}$ as generation-weighted average for the three years.

Because plant specific fuel consumption and electricity generation data are not publicly available in China, the guidance requested by DNV from the CDM Executive Board for a



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deviation of the baseline methodology of AM0005 has been applied for calculation of the build margin (BM) emission factor for this project /14/:

Following the EB's guidance the build margin is calculated as follows:

- The capacity additions from the years 1998 to 2005 is chosen and reach 21.34% of total installed capacity /10/.
- The weight of installed capacity additions for thermal power plant is accounted for 91.31% of total installed capacity additions /10/.
- Use of the efficiency level of the best technology commercially available in the provincial/regional or national grid of China, as a conservative proxy, for each fuel type in estimating the fuel consumption. This is 35.82% for coal power plants and 47.67% for oil power plants and gas power plants /12/. The efficiency values were only available 9 August 2007.
- Country specific data for net calorific value (NCV_i) of each type of fossil fuel/11/, the IPCC 2006 default values for emission factor and oxidation factor of each type of fossil fuel/9/ and the total electricity delivered to the NEPG have been selected and are deemed reasonable/19/
- The EF_{BM} is calculated as 0.8632tCO₂/MWh.

The combined margin emission factor has been calculated using the weighting of 75:25 at 1.1459 t CO₂/MWh and is fixed *ex-ante* for the crediting period. The emission factor calculations are complete and transparent, and their accuracy has been verified. The baseline emission estimate can be replicated using the data and parameter values provided in the PDD and supporting files submitted for registration. The data sources mentioned have been verified by DNV.

In summary, the GHG calculations are complete and transparent, and their accuracy has been verified. No other project emission or leakage sources contributing more than 1% and not mentioned by the methodology have been found.

4.7 Environmental Impacts

An environmental impact assessment (EIA) has been conducted according to Chinese law and regulation. The potential environmental impacts have been sufficiently identified. No significant environmental impacts are expected from the project activity. The Environmental Protection Bureau of Inner Mongolia Autonomous Region approved the project activity on 09 August 2006, which has been verified by DNV /5/.

4.8 Comments by Local Stakeholders

The project developer has conducted stakeholder consultations. A stakeholder conference was held in August 2007 and 8 representatives respectively expressed their opinions for the proposed project, including the local Environmental Protection Bureau, Local Development and Reform Commission, local Electricity Supply Company and local villagers and residents. Local stakeholders from local areas and local government were invited through a questionnaire to provide comments on the project. In the survey, 22 questionnaires were distributed to local stakeholders and 22 questionnaires were returned giving a 100% response rate. The proposed project is located at west Wenniute Banner, Chifeng City, Inner Mongolia



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Autonomous Region, China, which is far from the center of villages. Moreover, there aren't farmlands and pastures at the range of the location of the proposed project. There are few people will be affected by the impacts from the proposed project. Therefore, it is sufficient that the 8 representatives and 22 questionnaires were selected on behalf of the local stakeholders near the project site.

DNV has checked all the questionnaires received /23/. The survey shows that the proposed project receives support from the local people.

DNV considers the local stakeholder consultation carried out adequate.

4.9 Comments by Parties, Stakeholders and NGOs

The PDD of 15 June 2007 was made publicly available on DNV's climate change website (<http://cdm.unfccc.int/Projects/Validation/DB/6J7CD4DCMOTZ6EVMKRT55170NXOUFU/view.html>) and Parties, stakeholders and NGOs were through the CDM website invited to provide comments during a 30 days period from 25 August 2007 to 23 September 2007. No comment was received during this period.

APPENDIX A

CDM VALIDATION PROTOCOL

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

Requirement	Reference	Conclusion
About Parties		
The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3.	Kyoto Protocol Art.12.2	OK
The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC.	Kyoto Protocol Art.12.2.	OK
The project shall have the written approval of voluntary participation from the designated national authority of each Party involved.	Kyoto Protocol Art. 12.5a, CDM Modalities and Procedures §40a	~~CAR-1~~ OK
The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof.	Kyoto Protocol Art. 12.2, CDM Modalities and Procedures §40a	~~CAR-1~~ OK
In case public funding from Parties included in Annex I is used for the project activity, these Parties 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 these Parties.	Decision 17/CP.7, CDM Modalities and Procedures Appendix B, § 2	OK
Parties participating in the CDM shall designate a national authority for the CDM.	CDM Modalities and Procedures §29	OK
The host Party and the participating Annex I Party shall be a Party to the Kyoto Protocol.	CDM Modalities §30/31a	OK
The participating Annex I Party's assigned amount shall have been calculated and recorded.	CDM Modalities and Procedures §31b	OK
The participating Annex I Party shall have in place a national system for estimating GHG emissions and a national registry in accordance with Kyoto Protocol Article 5 and 7.	CDM Modalities and Procedures §31b	OK

Requirement	Reference	Conclusion
About additionality		
Reduction in GHG emissions shall be additional to any that would occur in the absence of the project activity, i.e. a CDM project activity is additional if anthropogenic emissions of greenhouse gases by sources are reduced below those that would have occurred in the absence of the registered CDM project activity.	Kyoto Protocol Art. 12.5c, CDM Modalities and Procedures §43	OK
About forecast emission reductions and environmental impacts		
The emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change.	Kyoto Protocol Art. 12.5b	OK
For large-scale projects only		
Documentation on the analysis of the environmental impacts of the project activity, including transboundary impacts, shall be submitted, and, if those impacts are considered significant by the project participants or the Host Party, an environmental impact assessment in accordance with procedures as required by the Host Party shall be carried out.	CDM Modalities and Procedures §37c	OK
About stakeholder involvement		
Comments by local stakeholders shall be invited, a summary of these provided and how due account was taken of any comments received.	CDM Modalities and Procedures §37b	OK
Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days, and the project design document and comments have been made publicly available.	CDM Modalities and Procedures §40	OK
Other		
The baseline and monitoring methodology shall be previously approved by the CDM Executive Board.	CDM Modalities and Procedures §37e	OK
A baseline shall be established on a project-specific basis, in a transparent manner and taking into account relevant national and/or sectoral policies and circumstances.	CDM Modalities and Procedures §45c,d	OK

Requirement	Reference	Conclusion
The baseline methodology shall exclude to earn CERs for decreases in activity levels outside the project activity or due to force majeure.	CDM Modalities and Procedures §47	OK
The project design document shall be in conformance with the UNFCCC CDM-PDD format.	CDM Modalities and Procedures Appendix B, EB Decision	OK
Provisions for monitoring, verification and reporting shall be in accordance with the modalities described in the Marrakech Accords and relevant decisions of the COP/MOP.	CDM Modalities and Procedures §37f	OK

Table 2 Requirements Checklist

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A. General Description of Project Activity <i>The project design is assessed.</i>					
A.1. Project Boundaries <i>Project Boundaries are the limits and borders defining the GHG emission reduction project.</i>					
A.1.1. Are the project's spatial boundaries (geographical) clearly defined?	/1/	DR I	Yes. The proposed project is located at northwest of Songshan District, Chifeng City, Inner Mongolia Autonomous Region, China. The geographical co-ordinates are: east longitude 118°43'26", and northern latitude 42°23'2".		OK
A.1.2. Are the project's system boundaries (components and facilities used to mitigate GHGs) clearly defined?	/1/	DR	Yes. The project's system boundaries are clearly defined. It includes the project site and the Northeast China Power Grid (NCPG) which is composed of Liaoning, Jilin and Heilongjiang power grid.		OK
A.2. Participation Requirements <i>Referring to Part A, Annex 1 and 2 of the PDD as well as the CDM glossary with respect to the terms Party, Letter of Approval, Authorization and Project Participant.</i>					
A.2.1. Which Parties and project participants are participating in the project?	/1/	DR	One project participant is Chifeng Xinsheng Wind Power Co., Ltd., China. The country of another participant, EDF Trading Limited in A.3 and Annex 1 is not the same.	~~CL-4~~	OK

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A.2.2. Have all involved Parties provided a valid and complete letter of approval and have all private/public project participants been authorized by an involved Party?	/1/	DR	The letters of approval from the DNA of both parties have not been obtained. Refer to CL-1	~~CAR-1~~ ~~CL-1~~	OK
A.2.3. Do all participating Parties fulfil the participation requirements as follows: - Ratification of the Kyoto Protocol - Voluntary participation - Designated a National Authority	/1/	DR	China ratified the Kyoto Protocol on 30 August, 2002. The letters of approval from the DNA of both parties have not been obtained to ensure that both Parties participate in the CDM on a voluntary basis. Refer to CL-1	~~CAR-1~~ ~~CL-1~~	OK
A.2.4. Potential public funding for the project from Parties in Annex I shall not be a diversion of official development assistance.	/1/	DR	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 China.		OK
A.3. Technology to be employed <i>Validation of project technology focuses on the project engineering, choice of technology and competence/ maintenance needs. The validator should ensure that environmentally safe and sound technology and know-how is used.</i>					
A.3.1. Does the project design engineering reflect current good practices?	/1/	DR	The project design engineering reflects current good practices in China. In the FSR, the total capacity for the project is 49.3MW with 58 wind turbines (each with 850kW). In section A.2. in PDD, it mentions that the proposed project involves the	~~CL-2~~	OK

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			installation of 25 wind turbines (Vestas V80-2000kW of Denmark), each of which has the capacity of 2000kW, for a total installed capacity of 50MW. Please clarify it.		
A.3.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used technologies in the host country?	/1/	DR I	Yes. The project applies wind turbines manufactured by Vestas from Denmark, which represents state of the art technology.		OK
A.3.3. Does the project make provisions for meeting training and maintenance needs?	/1/	DR I	Yes. The training has been provided by project owner and manufacturer.		OK
A.4. Contribution to Sustainable Development <i>The project's contribution to sustainable development is assessed.</i>					
A.4.1. Has the host country confirmed that the project assists it in achieving sustainable development?	/1/	DR	The letter of approval from the DNA of China confirming the project being in line with the sustainable development policies of host country has not been received.	~~CAR-1~~	OK
A.4.2. Will the project create other environmental or social benefits than GHG emission reductions?	/1/	DR	Yes. The project will, among others benefits, mitigate local environmental pollution caused by thermal power plants.		OK
B. Project Baseline <i>The validation of the project baseline establishes whether the selected baseline methodology is appropriate and whether the selected baseline represents a likely baseline scenario.</i>					
B.1. Baseline Methodology <i>It is assessed whether the project applies an appropriate baseline methodology.</i>					

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.1.1. Does the project apply an approved methodology and the correct version thereof?	/1/	DR	Yes. The project applies ACM0002 (version 06) "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".		OK
B.1.2. Are the applicability criteria in the baseline methodology all fulfilled?	/1/	DR	Yes. The project is a capacity addition from a renewable energy source and does not involve on-site fuel switch from fossil fuels to a renewable source.		OK
B.2. Baseline Scenario Determination <i>The choice of the baseline scenario will be validated with focus on whether the baseline is a likely scenario, and whether the methodology to define the baseline scenario has been followed in a complete and transparent manner.</i>					
B.2.1. What is the baseline scenario?	/1/	DR	The baseline is determined as continued operation of the existing power plants and the addition of new generation sources to meet electricity demand.		OK
B.2.2. What other alternative scenarios have been considered and why is the selected scenario the most likely one?	/1/	DR	The alternate baseline scenarios have been suitably identified as, The proposed project not undertaken as a CDM project activity but as a commercial project; The thermal power plant with the same annual electricity output as the proposed project; Other renewable energy project with the same annual electricity output as the		OK

* 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.

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			proposed project; To provide the same electricity output by Northeast China Power Grid. The thermal power plant scenario does not comply with the Chinese law as thermal power plants with a capacity less than 135 MW are prohibited to be built in areas covered by large grids such as provincial grids*. The proposed project activity not undertaken as a CDM project activity is not a realistic and credible alternative, as discussed in the analysis below. It is lack of exploitable hydro resource at the project location. However, the evidences of the technology development status and the high cost for solar PV, biomass and geothermal need to be provided for scenario c)	~~CAR-2~~	
B.2.3. Has the baseline scenario been determined according to the methodology?	/1/	DR	Yes.		OK
B.2.4. Has the baseline scenario been determined using conservative assumptions where possible?	/1/	DR	Yes.		OK
B.2.5. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	/1/	DR	Yes. The renewable energy law and sectoral policy have been taken into account.		OK
B.2.6. Is the baseline scenario determination compatible with the available data and are all literature and sources clearly referenced?	/1/	DR	Yes.		OK

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.2.7. Have the major risks to the baseline been identified?	/1/	DR	There are no significant risks to the baseline except the enforcement of the Chinese renewable law. However, this law does not need to be taken into account as it is being implemented only now i.e. after the entry into force of decision 17.CP 7.		OK
B.3. Additionality Determination <i>The assessment of additionality will be validated with focus on whether the project itself is not a likely baseline scenario.</i>					
B.3.1. Is the project additionality assessed according to the methodology?	/1/	DR I	The project additionality is demonstrated by applying the “Tool for the demonstration and assessment of additionality”. <i>Step 1: Identification of the alternatives to the project activity consistent with the current laws and regulations.</i> The alternate baseline scenarios have been suitably identified as, The proposed project not undertaken as a CDM project activity but as a commercial project; The thermal power plant with the same annual electricity output as the proposed project; Other renewable energy project with the same annual electricity output as the proposed project; To provide the same electricity output by		OK

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			Northeast China Power Grid. The thermal power plant scenario does not comply with the Chinese law as thermal power plants with a capacity less than 135 MW are prohibited to be built in areas covered by large grids such as provincial grids. The proposed project activity not undertaken as a CDM project activity is not a realistic and credible alternative, as discussed in the analysis below. <i>Step 2: Investment analysis.</i> Benchmark analysis (Option III) is justified to conduct the investment analysis. - In China an IRR of 8 % for total investment of a project is regarded as benchmark for investments in hydropower plants, fossil fuel fired plants and wind farm projects. The project IRR without CER revenues is 7.61 % which shows that the project is not financially attractive in absence of CDM benefits. Please give evidence that the document mentioned in PDD “Economical assessment and parameters for construction project, 3rd edition” is the authorized document for IRR benchmark of wind power in China. - A sensitivity analysis shows that when the total investments, electricity tariff and	~~CL-3~~ ~~CL-4~~	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			annual O&M cost within the range of -10% ~10%. Please include the sensitivity analysis for the fluctuation of annual electricity outputs. - If the total investment decreases by 2.5%, the IRR of the project could exceed the benchmark value. However, it is not likely that the total investment will decrease by 2.5% considering the stable prices of imported power generation equipment. The electricity tariff keeps stable from 2002 in East Inner Mongolia region in China. Therefore, it is deemed unlikely that the tariff can increase by 2.55% to make the project IRR reach the benchmark. - When the annual O&M cost fluctuates within the range of -10% ~10%, the IRR will not reach the benchmark. It needs to provide the IRR calculation spreadsheet, the data source and relevant evidences. The detailed information needs to be integrated in the PDD or submitted as annexes to PDD. For sensitivity analysis discussion, it is stated that the tariff will not change and will remain static over the complete crediting period. However, it needs to be substantiated with documentary evidence. Please provide the evidences that the total investment will not	CL-5	

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			exceed the mentioned range. <i>Step 3: Barrier analysis.</i> Barrier analysis has not been selected for additionality demonstration. <i>Step 4: Common practice analysis.</i> Wind farm projects with an installed capacity of 40~60 MW which are applying or registered as CDM project in Inner Mongolia Autonomous Region are listed in the common practice. Please list all the projects that are considered similar if they are in the same country/region and/or rely on a broadly similar technology, are of a similar scale, and take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing, etc.	CL-6	
B.3.2. Are all assumptions stated in a transparent and conservative manner?	/1/	DR	Refer to CL-5	CL-5	OK
B.3.3. Is sufficient evidence provided to support the relevance of the arguments made?	/1/	DR	Refer to CL-5.	CL-5	OK
B.3.4. If the starting date of the project activity is before the date of validation, has sufficient evidence been provided that the incentive from the CDM was seriously considered in the decision to proceed with the project activity?	/1/	DR I	Documentary evidence to confirm that the revenues from CDM were seriously considered in the decision to proceed with the project activity needs to be provided.	CL-7	OK

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.4. Calculation of GHG Emission Reductions – Project emissions <i>It is assessed whether the project emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.</i>					
B.4.1. Are the calculations documented according to the approved methodology and in a complete and transparent manner?	/1/	DR	Project emission is regarded as zero as the project is a renewable energy (wind source) project.		OK
B.4.2. Have conservative assumptions been used when calculating the project emissions?	/1/	DR	Ditto		OK
B.4.3. Are uncertainties in the project emission estimates properly addressed?	/1/	DR	Ditto		OK
B.5. Calculation of GHG Emission Reductions – Baseline emissions <i>It is assessed whether the baseline emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.</i>					
B.5.1. Are the calculations documented according to the approved methodology and in a complete and transparent manner?	/1/	DR	Yes. Baseline emissions are calculated as the net electricity generated from the renewable source times the NEPG emission factor. The grid emission factor is calculated in line with ACM0002 as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM).		OK

CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.5.2. Have conservative assumptions been used when calculating the baseline emissions?	/1/	DR	Yes.		OK
B.5.3. Are uncertainties in the baseline emission estimates properly addressed?	/1/	DR	Yes.		OK
B.6. Calculation of GHG Emission Reductions – Leakage <i>It is assessed whether leakage emissions are stated according to the methodology and whether the argumentation for the choice of default factors and values – where applicable – is justified.</i>					
B.6.1. Are the leakage calculations documented according to the approved methodology and in a complete and transparent manner?	/1/	DR	There are no leakages that need to be considered in applying this methodology.		OK
B.6.2. Have conservative assumptions been used when calculating the leakage emissions?	/1/	DR	Ditto		OK
B.6.3. Are uncertainties in the leakage emission estimates properly addressed?	/1/	DR	Ditto		OK
B.7. Emission Reductions <i>The emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change.</i>					
B.7.1. Are the emission reductions real, measurable and give long-term benefits related to the mitigation of climate change.	/1/	DR	Yes.		OK

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.8. Monitoring Methodology <i>It is assessed whether the project applies an appropriate monitoring methodology.</i>					
B.8.1. Is the monitoring plan documented according to the approved methodology and in a complete and transparent manner?	/1/	DR	The monitoring plan is in accordance with the approved monitoring methodology ACM0002 (version 06) “Consolidated monitoring methodology for grid-connected electricity generation from renewable sources” and is in a complete and transparent manner.		OK
B.8.2. Will all monitored data required for verification and issuance be kept for two years after the end of the crediting period or the last issuance of CERs, for this project activity, whichever occurs later?	/1/	DR	Yes.		OK
B.9. Monitoring of Project Emissions <i>It is established whether the monitoring plan provides for reliable and complete project emission data over time.</i>					
B.9.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for estimation or measuring the greenhouse gas emissions within the project boundary during the crediting period?	/1/	DR	There are no emissions from the project activity.		OK
B.10. Monitoring of Baseline Emissions <i>It is established whether the monitoring plan provides for reliable and complete baseline emission data over time.</i>					
B.10.1. Does the monitoring plan provide for the collection and archiving of all relevant data	/1/	DR	The project uses the <i>ex-ante</i> determination of emission factor for grid electricity. Only		OK

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necessary for determining baseline emissions during the crediting period?			electricity supplied to the grid will be monitored and double checked with the sale invoice of electricity.		
B.10.2. Are the choices of baseline GHG indicators reasonable and conservative?	/1/	DR	The choice of baseline indicators is in line with ACM0002.		OK
B.10.3. Is the measurement method clearly stated for each baseline indicator to be monitored and also deemed appropriate?	/1/	DR	Yes. The electricity supplied to the grid will be measured through metering equipment at the substation.		OK
B.10.4. Is the measurement <i>equipment</i> described and deemed appropriate?	/1/	DR	Yes. There are two meters installed for the proposed project. The first meter (check meter) is installed at the outlet of the main transformer of the project. The second meter (key meter) is installed at the entrance to 220KV substation. When the key meter is out of order, the check meter is for backup usage.		OK
B.10.5. Is the measurement <i>accuracy</i> addressed and deemed appropriate? Are procedures in place on how to deal with erroneous measurements?	/1/	DR	Yes. The metering equipments are calibrated annually to ensure accuracy. Procedures to deal with erroneous measurements have been in place.		OK
B.10.6. Is the measurement <i>interval</i> for baseline data identified and deemed appropriate?	/1/	DR	No, the measurement <i>interval</i> for baseline data mentioned in PDD is monthly, which is not deemed appropriate.	CL-8	OK
B.10.7. Is the registration, <i>monitoring</i> , <i>measurement</i> and <i>reporting</i> procedure defined?	/1/	DR	Yes.		OK
B.10.8. Are procedures identified for <i>maintenance</i> of monitoring equipment and installations? Are the	/1/	DR	Yes. The metering equipment for electricity will be properly calibrated annually.		OK

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calibration intervals being observed?					
B.10.9. Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)	/1/	DR	Procedures for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation) have not been identified.	~~CL-9~~	OK
B.11. Monitoring of Leakage <i>It is assessed whether the monitoring plan provides for reliable and complete leakage data over time.</i>					
B.11.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	/1/	DR	Project participants do not need to consider leakage in applying this methodology.		OK
B.12. Monitoring of Sustainable Development Indicators/ Environmental Impacts <i>It is assessed whether choices of indicators are reasonable and complete to monitor sustainable performance over time.</i>					
B.12.1. Is the monitoring of sustainable development indicators/ environmental impacts warranted by legislation in the host country?	/1/	DR	DNA of China does not require collection and archiving of data related to environmental, social and economic impacts. The environmental impacts will be monitored by local environmental authority.		OK
B.12.2. Does the monitoring plan provide for the collection and archiving of relevant data concerning environmental, social and economic impacts?	/1/	DR	The indicators of environmental impacts will be stipulated by local environmental authority.		OK
B.12.3. Are the sustainable development indicators in line with	/1/	DR	This will be verified through the letter of	~~CAR-1~~	OK

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
stated national priorities in the Host Country?			approval from the DNA of China, which is yet to be obtained.		
B.13. Project Management Planning <i>It is checked that project implementation is properly prepared for and that critical arrangements are addressed</i>					
B.13.1. Is the authority and responsibility of overall project management clearly described?	/1/	DR I	Yes. The authority and responsibility of overall project management is clearly described.		OK
B.13.2. Are procedures identified for training of monitoring personnel?	/1/	DR	Procedures for monitoring personnel training need to be identified.	~~CL-10~~	OK
B.13.3. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	/1/	DR	No emergency situation which can cause unintended emissions is expected from the project.		OK
B.13.4. Are procedures identified for review of reported results/data?	/1/	DR	Procedures for review of reported results/data have not been identified.	~~CL-11~~	OK
B.13.5. Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	/1/	DR	The procedures for corrective actions in order to provide for more accurate future monitoring and reporting have not been identified, but will be put in place by the commissioning of the project.		OK
C. Duration of the Project/ Crediting Period <i>It is assessed whether the temporary boundaries of the project are clearly defined.</i>					
C.1.1. Are the project's starting date and operational lifetime clearly defined and evidenced?	/1/ /4/	DR I	The project construction starting date was 16 July 2007 as per the PDD, which is inconsistent with what provided by the		OK

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CHECKLIST QUESTION	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
	/19/		project developer (the reference document /19/ of section 3.1) as 25 August 2007. The expected operational lifetime of the project is 21 years, which is not the same as the operational lifetime in Feasibility Study Report.	CL-12	
C.1.2. Is the start of the crediting period clearly defined and reasonable?	/1/	DR	A renewable crediting period (7 years) is selected starting from 01 June 2010, which is reasonable.		OK
D. Environmental Impacts <i>Documentation on the analysis of the environmental impacts will be assessed, and if deemed significant, an EIA should be provided to the validator.</i>					
D.1.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?	/1/	DR	Yes. The environmental impacts during construction and operation period are elaborated in the PDD, mainly about impacts of air, noise, water and solid waste and ecosystem on environment.		OK
D.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	/1/ /5/	DR	Yes. The project has been approved by the Environmental Protection Bureau of Inner Mongolia Autonomous Region.		OK
D.1.3. Will the project create any adverse environmental effects?	/1/ /5/	DR	There are no significant adverse environmental effects for the project according to the EIA.		OK
D.1.4. Are transboundary environmental impacts considered in the analysis?	/1/	DR	There are no transboundary environmental impacts foreseen for the project.		OK
D.1.5. Have identified environmental impacts been	/1/	DR	Yes.		OK

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addressed in the project design?					
D.1.6. Does the project comply with environmental legislation in the host country?	/1/	DR	Yes.		OK
E. Stakeholder Comments <i>The validator should ensure that stakeholder comments have been invited with appropriate media and that due account has been taken of any comments received.</i>					
E.1.1. Have relevant stakeholders been consulted?	/1/ /5/	DR I	The stakeholder consultation questionnaires need to be provided by the project developer to verify	~~CL-13~~	OK
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	/1/	DR I	Yes. The meeting and distribution of questionnaires had been used to invite the comments from the local stakeholders.		OK
E.1.3. If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	/1/	DR	The stakeholder consultation questionnaires need to be provided by the project developer to verify.	~~CL-13~~	OK
E.1.4. Is a summary of the stakeholder comments received provided?	/1/	DR	The stakeholder consultation questionnaires need to be provided by the project developer to verify.	~~CL-13~~	OK
E.1.5. Has due account been taken of any stakeholder comments received?	/1/	DR I	The stakeholder consultation questionnaires need to be provided by the project developer to verify	~~CL-13~~	OK

Table 2b: Additional requirements checklist for VVM version 1 (EB44)

Checklist Question	Ref.	MoV*	Comments	Draft Concl.	Final Concl.
A.1. Letter of approval					
A.1.1 Is the LoA received directly from the DNA or through the project participant.	/19/ /20/	DR I	The LoAs were received through the project participant.		OK
A.2. Project design					
A.2.1 Does the PDD describe the CDM project activity with all relevant elements in a transparent and accurate way?	/1/ /2/	DR I	Yes, the project location, technology and install capacity are clearly described in the PDD and in line with the adjusted FSR.		OK
A.2.2 Has the CDM project activity at the start of the validation been constructed or does the CDM project activity use existing facilities or equipment?	/1/	DR I	The project is a new built wind farm project in Inner Mongolia Autonomous Region in China. The project starting data was 25 August 2007, is the same date as the project PDD publish date of 25 August 2007.		OK
A.2.3 Is the project a large scale project, a small scale project with average annual emission reductions above 15 000 tonnes or a bundled small scale project? Has on-site visit been carried out?	/1/	DR I	The Inner Mongolia Chifeng Gaofeng Wind Power Project is a new built wind farm project, the install capacity is 50MW, is higher than 15MW, so it is a large scale project. Through the documents which the project participant provided, including PDD, adjusted FSR, EIA and other relevant background documents, DNV can confirm the project design, construction, operation and monitoring plan and all baseline scenario information. In addition, according to EIA /5/, no migration was involved in this project,		OK

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			so no further issues can be assessed through on site visit. Thus, DNV can justify that a physical site visit for this project was not arranged during the validation process.		
A.2.4 Does the project activity involved alteration of existing installations? If so, have the differences between pre-project and post-project activity been clearly described in the PDD?	/1/	DR I	No, the project is a new build wind power project.		OK
A.3. Project emissions not addressed by the methodology					
A.3.1 Does the methodology describe all project emission source for the project activity that contributes all 1% of the emission reductions? Sources that the methodology considers not to take into account are not relevant (e.g. cement and iron consumption for building hydropower plants).	/1/ /6/	DR I	The project is a new built wind farm plant use water resources, use the approved methodology ACM0002 version 10, the project emission can be considered as zero.		OK
A.4. Documentation of baseline emissions					
A.4.1 Documentation of the baseline determination: - All assumptions and data used by the project participants are listed in the PDD and related document to be submitted for registration. The data are properly referenced. - All documentation is relevant as well as correctly quoted and interpreted. - Assumptions and data can be deemed reasonable. - Relevant national and/or sectoral policies and circumstances are considered and listed in the PDD. - The methodology has been correctly applied to identify what would occur in the absence of the proposed CDM project activity.	/1/ /2/ /3/ /6/	DR	(1) Yes, All data In the PDD used to determine the baseline emissions are form the EIA, adjusted FSR and other reference document. (2) Yes, according to the reference list, all documents of the baseline determination were correctly quoted and interpreted. (3) Assumptions and data can be deemed reasonable (4) Relevant national include Chinese renewable law and China environment protection law and/or sectoral policies are considered and listed in the PDD. (5) The methodology has been correctly applied to identify the most reasonable baseline scenario.		OK

A.5. Documentation of the calculations					
A.5.1 Algorithms and/or formulae used to determine emission reductions - All assumptions and data used by the project participants are listed in the PDD and related document submitted for registration. The data are properly referenced - All documentation is correctly quoted and interpreted. - All values used can be deemed reasonable in the context of the project activity - The methodology has been correctly applied to calculate the emission reductions and this can be replicated by the data provided in the PDD and supporting files to be submitted for registration.	/1/ /4/ /5/ /6/	DR	(1) All data in the PDD used to determine the calculation are from the adjusted FSR, China Electric Power Yearbook, China Energy Statistical Yearbook, IPCC 2006 and other reference document. The data are properly referenced. (2) According to the reference list, all documents of the calculation were correctly quoted and interpreted. (3) All values used can be deemed reasonable in the context of the project activity. (4) The project is a new built wind farm project, does not involve switching from fossil fuels to renewable energy sources at the site of the project activity, the install capacity is 50MW, according to the Applicability of ACM0002 version 10, this project is applicable to the project. The calculation of emission reduction in line with the baseline methodology procedure in ACM0002.		OK
A.6. Implementation of the monitoring plan					
A.6.1 How were the plans for implementation of the monitoring plan, data management, QA/QC procedures assessed? To what extent can the emission reductions achieved by the project be monitored ex-post and verified later by a DOE?	/1/	DR	The Monitoring System, Management Structure, QA/QC and Monitoring Training described in the PDD are assessed and the monitoring plan is deemed reasonable. The monitoring plan, as described in the PDD, is in line with the methodology ACM0002 and, if implemented correctly,		OK

			will allow for reliable and complete project emission data monitoring over time and the complete verification by a DOE.		
A.7. CDM consideration prior to starting date					
A.7.1 The prior consideration of CDM for the project activity complies with EB41 annex 46.	/1/	DR I	The starting date of the project is 25 August 2007, which is the issuance date of the construction permit/18/. DNV was able to confirm that the starting date was defined properly, as it was the earliest among the implementation, construction date or real action of the project, compared with construction permission for the project issued by Chifeng Jinpeng Supervision Co. Ltd. on 25 August 2007/18/, Construction Contract of Wind Turbine Infrastructure for Inner Mongolia Chifeng Gaofeng Wind Power Project signed between Chifeng Xinsheng Wind Power Co., Ltd. and Inner Mongolia Coal Construction Engineering(Group) Company in 25 August 2007/35/ and Purchase contract for wind turbines signed between Chifeng Xinsheng Wind Power Co., Ltd. and Vestas Wind Technology (China) Co. Ltd. on 23 February 2008/27/. The CDM consideration of the project activity is demonstrated by the following milestones: • The initial feasibility study report of Inner Mongolia Chifeng Gaofeng Wind Power Project was prepared in June 2006 was approved by the		OK

			Development and Reform Commission of Inner Mongolia Autonomous Region on 9 November 2006; In FSR, the total capacity for the project is 49.3MW with 58 wind turbines (each with 850kW) /4/. • On 25 January 2007, Project participant decided to change the type of wind turbine to the capacity of 2MW each /28/ due to the demand of the wind turbines with the capacity of 850KW is larger than supply in the market, which is evidenced by the document of Advices on the Wind Turbine Procurement for Inner Mongolia Chifeng Gaofeng Wind Power Project supplied by tendering company on 13 January 2007/29/ • The Adjusted Feasible Study Report (AFSR) was prepared by Xinjiang Wind Power Design Institute on 12 March 2007 and the project developer was suggested to consider CDM benefit/19/. • On 15 May 2007, the meeting minutes of the Board of Directors on applying CDM was issued on 15 May 2007 by Chifeng Xinsheng Wind Power Co., Ltd./30/ • On 16 July 2007 CDM Development Consultant Contract was signed	
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			between Chifeng Xinsheng Wind Power Co., Ltd. and China Fulin Wind Power Development Co. Ltd./31/ • On 25 August 2007, PDD was webhosted on DNV's climate change website • On 25 August 2007, the construction permit was issued by Chifeng Jinpeng Supervision Co. Ltd./18/ and the project started. • On 25 August 2007, Construction Contract of Wind Turbine Infrastructure for Inner Mongolia Chifeng Gaofeng Wind Power Project was signed between Chifeng Xinsheng Wind Power Co., Ltd. and Inner Mongolia Coal Construction Engineering(Group) Company ./35/ • On 10 January 2008, confirmation letter for adjusted feasibility study report of Inner Mongolia Chifeng Gaofeng Wind Power Project was issued by NDRC/32/ • In January 2008, Chinese LoA was issued by Chinese DNA/2/ • On 23 February 2008, purchase contract for wind turbines was signed between Chifeng Xinsheng Wind Power Co., Ltd. and Vestas Wind Technology (China) Co. Ltd./27/	
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			On 31 March 2008, French LoA was issued by DNA of France/3/ DNV was able to confirm that the incentive from CDM was seriously considered in the decision to implement the project activity and continued action to secure CDM status was implemented by assessing the above evidences.	
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Table 3 Resolution of Corrective Action and Clarification Requests

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
CAR 1 The letters of approval from the DNA of both Parties have not been obtained.	A.2.2 A.2.3 A.4.1	The letters of approval from the DNA of both parties have been provided to DOE.	OK. Letter of Approval by Chinese DNA was issued in January 2008/2/. Letter of Approval by DNA of France was issued on 31 March 2008/3/. The CAR is closed.
CAR 2 The evidences of the technology development status and the high cost for solar PV, biomass and geothermal need to be provided for scenario c).	B.2.2	The proof has been provided in PDD. According to National Development and Reform Commission about the technology development status and the high cost for solar PV, biomass and geothermal. The relevant evidences were provided to DOE. (http://www.ndrc.gov.cn/xxfw/hyyw/t20070628_144686.htm).	OK. Due to the technology development status and the high cost for power generation, solar PV, geothermal and biomass faces the difficulties and barriers /21/. Therefore, other sources of renewable energy are not feasible and excluded. All relevant evidences were referenced in PDD and verified by DNV. The CAR is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
CL-1 One project participant is Chifeng Xinsheng Wind Power Co., Ltd., China. The country of another participant, EDF Trading Limited in A.3 and Annex 1 is not the same. Please confirm.	A.2.1 A.2.2 A.2.3	The exact information in A.3 and Annex 1 has been provided in PDD. The country of another participant is France, but, EDF Trading Limited is registered in United Kingdom of Great Britain and Northern Ireland.	OK. France is the Annex I country. Letter of Approval by DNA of France was issued on 31 March 2008/3/. The CL is closed.
CL-2 In the FSR, the total capacity for the project is 49.3MW with 58 wind turbines (each with 850kW). In section A.2. in PDD, it mentions that the proposed project involves the installation of 25 wind turbines (Vestas V80-2000kW of Denmark), each of which has the capacity of 2000kW, for a total installed capacity of 50MW. Clarification is needed.	A.3.1	The feasibility study report of the proposed project was approved by Development and Reform Commission of Inner Mongolia Autonomous Region on 9 November 2006, in which the total capacity for the project is 49.3MW with 58 wind turbines (each with 850kW).After that, the project owner began to implement equipments tendering. At that time, the demand of the wind turbines with the capacity of 850KW exceeded supply in the market. Tendering Company advised the project owner to choice other wind turbines instead of the wind turbines with the capacity of 850KW on 13 January 2007. According to the technological comparisons between the wind turbines with the different capacity in the FSR and the advices from Tendering Company, the project owner decided to choice the Vestas 80-2000kW of	OK. The initial feasibility study report of Inner Mongolia Chifeng Gaofeng Wind Power Project was prepared in June 2006 was approved by the Development and Reform Commission of Inner Mongolia Autonomous Region on 9 November 2006. In FSR, the total capacity for the project is 49.3MW with 58 wind turbines (each with 850kW) /4/. On 25 January 2007, the project participant decided to change the type of wind turbine to the capacity of 2000 kW each due to the demand of the wind turbines with the capacity of 850KW is larger than supply in the market, which is evidenced by the document of Advices on the Wind Turbine Procurement for Inner Mongolia Chifeng Gaofeng Wind Power Project

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
		Denmark to implement the proposed project with the capacity of 50.0 MW and 25 wind turbines in the Meeting of the Board of Directors for replacing the wind turbines on 25 January 2007. Due to this change and the national provisions for the investment projects, the FSR should be revised based on new wind turbines determined. So in published PDD, it mentions that the proposed project involves the installation of 25 wind turbines (Vestas V80-2000kW of Denmark), each of which has the capacity of 2000kW, for a total installed capacity of 50MW. In the FSR, the comparative result on technology and economy showed that the investment for per kWh was higher with the increase of the capacity of wind turbines. Therefore, the economic data in the published PDD of the project was still based on the FSR, which is more conservative for the proposed project to evaluate the additionality. To be consistent with the actual situation, the PDD was revised according to the data from the Adjusted	supplied by tendering company on 13 January 2007/29/. The Adjusted Feasible Study Report (AFSR) was prepared by Xinjiang Wind Power Design Institute on 12 March 2007, in which it describes the project will use Vestas 80-2000kW of Denmark to implement the proposed project with the capacity of 50.0 MW and 25 wind turbines. To be consistent with the actual situation, in latest PDD, all of data was revised according to the data from the Adjusted FSR of the proposed project. The CL is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
		FSR of the proposed project.	
CL-3 The evidence below needs to be provided: “Economical assessment and parameters for construction project, 3rd edition” is the authorized document for IRR benchmark of wind power in China.	B.3.1	The “Economical assessment and parameters for construction project, 3rd edition”, compiled together by Ministry of Construction of the People’s Republic of China and National Development and Reform Commission, is used to justify that a project would be financially acceptable when the Internal Return Rate (IRR) is better than the benchmark IRR. The benchmark IRR is from the “Interim Rules on Economic Assessment of Electric Engineering Retrofit Projects”, where states that the benchmark IRR is 8% for power industry.	OK. According to the <i>Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects/30/</i>, in China an IRR of 8% (after tax) for the total investment of a project is regarded as a benchmark for investing in large scale hydropower plants, fossil fuel fired plants as well as wind farm projects. The benchmark of 8% (after tax) is therefore appropriate for this project. DNV was able to confirm this is suitable and reasonable as following: 1. This benchmark was determined by the national administration of this industry in China/16/; 2. This benchmark is for project and after tax and the investment analysis for this project will be for project and after tax also; 3. This <i>Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects /16/</i> is referred to the risk premiums of large scale wind farm power project.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
			The CL is closed.
CL-4 The sensitivity analysis needs to include the fluctuation of annual electricity outputs.	B.3.1	The sensitivity analysis for the fluctuation of annual electricity outputs has provided in PDD.	OK. The electricity output is included in the sensitivity analysis and the evidences and documents for the sensitivity analysis have been checked by DNV. The CL is closed.
CL-5 It needs to provide the IRR calculation spreadsheet, the data source and relevant evidences. The detailed information needs to be integrated in the PDD or submitted as annexes to PDD. For sensitivity analysis discussion, it is stated that the tariff will not change and will remain static over the crediting period; this needs to be substantiated with documentary evidence. The evidences that the total investment will not exceed the mentioned range need to be provided.	B.3.1 B.3.2 B.3.3	The IRR calculation spreadsheet has been provided to DOE. The required evidence has been provided to DOE.	OK. IRR calculation spreadsheet and relevant evidences have been checked by DNV. The evidences and documents for the sensitivity analysis have been checked by DNV. The CL is closed.
CL-6 Wind farm projects with an installed capacity of 40~60 MW which are applying or registered as CDM project in Inner Mongolia Autonomous Region are listed in the common practice. It needs to list all the projects that are considered similar if they are in the same	B.3.1	All the projects in Inner Mongolia Autonomous Region that are considered similar have been listed in the common practice. The references and descriptions for the	OK. In China, most of wind power projects are approved by the provincial government, electricity price and regulations are usually similar for wind power projects in the same province.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
country/region and/or rely on a broadly similar technology, are of a similar scale, and take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing, etc.		similar projects were shown in the revised PDD.	Inner Mongolia Autonomous Region (which is the location of the project and is a provincial level area in China) is selected as the geographical scope for the common practice analysis of the project. Wind farm projects of similar scale (25 to 75 MW) in Inner Mongolia Autonomous Region are discussed in the common practice analysis. In the list/17/, Dali Phase III wind farm project was supported by national debt special fund /25/; Huitengxile wind project is supported by soft loan from Denmark government and supported by State Economic and Trade Commission as a demonstration project/26/. Other projects have all considered CDM revenues as they faced similar investment barrier and financial unattractiveness, and have been registered as CDM projects successfully. The references of the listed similar projects have been verified and deem to be reliable. Therefore the project activity cannot be said to represent common practice. The CL is closed.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
CL-7 Documentary evidence to confirm that the revenues from CDM were seriously considered in the decision to proceed with the project activity needs to be provided.	B.3.4	The evidence has been provided to DOE.	The starting date of the project is 25 August 2007, which is the issuance date of the construction permit/18/. DNV was able to confirm that the starting date was defined properly, as it was the earliest among the implementation, construction date or real action of the project, compared with construction permission for the project issued by Chifeng Jinpeng Supervision Co. Ltd. on 25 August 2007/18/, Construction Contract of Wind Turbine Infrastructure for Inner Mongolia Chifeng Gaofeng Wind Power Project signed between Chifeng Xinsheng Wind Power Co., Ltd. and Inner Mongolia Coal Construction Engineering(Group) Company in 25 August 2007/35/ and Purchase contract for wind turbines signed between Chifeng Xinsheng Wind Power Co., Ltd. and Vestas Wind Technology (China) Co. Ltd. on 23 February 2008/27/. The CDM consideration of the project activity is demonstrated by the following milestones: • The initial feasibility study

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
			report of Inner Mongolia Chifeng Gaofeng Wind Power Project was prepared in June 2006 was approved by the Development and Reform Commission of Inner Mongolia Autonomous Region on 9 November 2006; In FSR, the total capacity for the project is 49.3MW with 58 wind turbines (each with 850kW) /4/. • On 25 January 2007, Project participant decided to change the type of wind turbine to the capacity of 2MW each /28/ due to the demand of the wind turbines with the capacity of 850KW is larger than supply in the market, which is evidenced by the document of Advices on the Wind Turbine Procurement for Inner Mongolia Chifeng Gaofeng Wind Power Project supplied by tendering company on 13 January 2007/29/ • The Adjusted Feasible Study Report (AFSR) was prepared by Xinjiang Wind Power Design

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
			Institute on 12 March 2007 and the project developer was suggested to consider CDM benefit/19/. • On 15 May 2007, the meeting minutes of the Board of Directors on applying CDM was issued on 15 May 2007 by Chifeng Xinsheng Wind Power Co., Ltd./30/ • On 16 July 2007 CDM Development Consultant Contract was signed between Chifeng Xinsheng Wind Power Co., Ltd. and China Fulin Wind Power Development Co. Ltd./31/ • On 25 August 2007, PDD was webhosted on DNV's climate change website • On 25 August 2007, the construction permit was issued by Chifeng Jinpeng Supervision Co. Ltd./18/ and the project started. • On 25 August 2007, Construction Contract of Wind

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
			Turbine Infrastructure for Inner Mongolia Chifeng Gaofeng Wind Power Project was signed between Chifeng Xinsheng Wind Power Co., Ltd. and Inner Mongolia Coal Construction Engineering(Group) Company ./35/ • On 10 January 2008, confirmation letter for adjusted feasibility study report of Inner Mongolia Chifeng Gaofeng Wind Power Project was issued by NDRC/32/ • In January 2008, Chinese LoA was issued by Chinese DNA/2/ • On 23 February 2008, purchase contract for wind turbines was signed between Chifeng Xinsheng Wind Power Co., Ltd. and Vestas Wind Technology (China) Co. Ltd./27/ • On 31 March 2008, French LoA was issued by DNA of France/3/ DNV was able to confirm that the incentive from CDM was seriously considered in the decision to implement

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
			the project activity and continued action to secure CDM status was implemented by assessing the above evidences.
CL-8 The measurement <i>interval</i> for baseline data mentioned in PDD is monthly, which is not identified and deemed appropriate.	B.10.6	The exact information has been provided in PDD. The electricity should be hourly measured and monthly recorded using calibrated meters.	OK. The measurement interval for baseline data mentioned in latest PDD is hourly The CL is closed.
CL-9 Procedures for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation) have not been identified.	B.10.9	The required information has been provided in Data Management System (B.7.2.6) of PDD.	OK. Procedures for day-to-day records handling such as what records to keep, storage area of records and how to process performance documentation have been identified in the latest PDD The CL is closed.
CL-10 Procedures for monitoring personnel training need to be identified.	B.13.2	Procedures for monitoring personnel training has been provided in Management structure of PDD.	OK. Procedures for monitoring personnel training have been identified in the latest PDD. The CL is closed.
CL-11 Procedures for review of reported results/data have not been identified.	B.13.4	Procedures for review of reported results/data has been provided in PDD.	OK Procedures for review of reported results/data have been identified in the latest PDD. The CL is closed.
CL-12	C.1.1	The exact information has been	OK.

Draft report clarifications and corrective action requests by validation team	Ref. to checklist question in table 2	Summary of project owner response	Validation team conclusion
The project construction starting date was 16 July 2007 as per the PDD, which is inconsistent with what provided by the project developer (the reference document /19/ of section 3.1) as 25 August 2007. The expected operational lifetime of the project is 21 years, which is not the same as the operational lifetime in Feasibility Study Report.		provided in PDD. The project construction starting date was 25 August 2007, and the expected operational lifetime of the project is 20 years.	The expected operational lifetime of the project has been revised to 20 in the latest PDD as per FSR The CL is closed.
CL-13 The stakeholder consultation questionnaires need to be provided by the project developer.	E.1.1 E.1.3 E.1.4 E.1.5	The stakeholder consultation questionnaires have been provided to DOE.	OK. DNV has checked all the questionnaires received /23/. The survey shows that the proposed project receives support from the local people. The CL is closed.

APPENDIX B

CERTIFICATES OF COMPETENCE



CERTIFICATE OF COMPETENCE

zhi Ang (Walter) Tang

Qualification in accordance with DNV's Qualification Scheme CDM/JI (ICP-8-1-CDMJi-i1)

<i>GHG Auditor:</i>	Yes				
<i>Technical Area</i>	<i>CDM Validator</i>	<i>CDM Verifier</i>	<i>Sector Expert</i>	<i>Methodology Expert</i>	<i>Technical Reviewer</i>
<i>Landfill gas</i>					
<i>Renewables</i>	<i>Hydro power</i>	Jan 2009			
	<i>Wind power</i>	Jan 2009		Apr 2009	Apr 2009
	<i>Other renewable</i>				
<i>Biomass</i>					
<i>Grid connection of isolated system</i>					
<i>Cement</i>					
<i>Waste-heat / waste-gas recovery</i>		Sept 2009			
<i>Efficiency of thermal power plants</i>	July 2009	July 2009			
<i>Coal mine methane</i>					
<i>Fuel switch</i>		Sept 2009			
<i>Manure management</i>					
<i>Waste / wastewater treatment</i>					
<i>Energy efficiency</i>		Sept 2009			
<i>N₂O</i>					
<i>HFCs</i>					
<i>Flare reduction</i>					
<i>PFCs</i>					
<i>Charcoal</i>					
<i>CO₂ recovery</i>		Sept 2009			
<i>Transport</i>					
<i>Non-renewable biomass</i>					
<i>Biofuel</i>					
<i>Pipeline leakage reduction</i>					
<i>SF₆</i>					

Høvik, 1 September 2009

Michael Lehmann

Michael Lehmann
Technical Director, Climate Change Services



CERTIFICATE OF COMPETENCE

Mathsy Kutty

Qualification in accordance with DNV's Qualification Scheme CDM/JI (ICP-8-1-CDMJi-i1)

GHG Auditor:	Yes				
Technical Area	CDM Validator	CDM Verifier	Sector Expert	Methodology Expert	Technical Reviewer
Landfill gas	Jan 2009				
Hydro power	Jan 2009				
Renewables				Jan 2009	Jan 2009
Wind power					
Other renewable					
Biomass					
Grid connection of isolated system					
Cement					
Waste-heat / waste-gas recovery					
Efficiency of thermal power plants					
Coal mine methane					
Fuel switch					
Manure management					
Waste / wastewater treatment				Jan 2009	Jan 2009
Energy efficiency					
N₂O					
HFCs					
Flare reduction					
PFCs					
Charcoal					
CO₂ recovery					
Transport					
Non-renewable biomass					
Biofuel					
Pipeline leakage reduction					
SF₆					

Høvik, 9 January 2009

Michael Lehmann

Michael Lehmann
Technical Director, Climate Change Services



CERTIFICATE OF COMPETENCE

Kumaraswamy Chandrashekara

Qualification in accordance with DNV's Qualification Scheme CDM/JI (ICP-8-1-CDMJi-i1)

GHG Auditor:	yes				
Technical Area	CDM Validator	CDM Verifier	Sector Expert	Methodology Expert	Technical Reviewer
Landfill gas	Jan 2009	Jan 2009		Jan 2009	Jan 2009
Hydro power	Jan 2009	Jan 2009			
Renewables Wind power	Jan 2009	Jan 2009		Jan 2009	
Other renewable	Jan 2009	Jan 2009			
Biomass	Jan 2009	Jan 2009		Jan 2009	
Grid connection of isolated system	Jan 2009	Jan 2009		Jan 2009	Jan 2009
Cement	Jan 2009	Jan 2009		Jan 2009	
Waste-heat / waste-gas recovery	Jan 2009	Jan 2009	Jan 2009	Jan 2009	
Efficiency of thermal power plants	Jan 2009	Jan 2009		Jan 2009	
Coal mine methane	Jan 2009	Jan 2009		Jan 2009	Jan 2009
Fuel switch	Jan 2009	Jan 2009		Jan 2009	
Manure management	Jan 2009	Jan 2009		Jan 2009	
Waste / wastewater treatment	Jan 2009	Jan 2009		Jan 2009	Jan 2009
Energy efficiency	Jan 2009	Jan 2009	Jan 2009	Jan 2009	
N ₂ O	Jan 2009	Jan 2009		Jan 2009	
HFCs	Jan 2009	Jan 2009	Jan 2009	Jan 2009	
Flare reduction	Jan 2009	Jan 2009		Jan 2009	
PFCs	Jan 2009	Jan 2009		Jan 2009	Jan 2009
Charcoal	Jan 2009	Jan 2009	Jan 2009	Jan 2009	
CO ₂ recovery	Jan 2009	Jan 2009	Jan 2009	Jan 2009	Jan 2009
Transport	Jan 2009	Jan 2009		Jan 2009	
Non-renewable biomass	Jan 2009	Jan 2009		Jan 2009	
Biofuel	Jan 2009	Jan 2009		Jan 2009	Jan 2009
Pipeline leakage reduction	Jan 2009	Jan 2009		Jan 2009	
SF ₆	Jan 2009	Jan 2009		Jan 2009	Jan 2009

Høvik, 9 January 2009

Michael Lehmann

Michael Lehmann
Technical Director, Climate Change Services



CERTIFICATE OF COMPETENCE

Weidong Yang

Qualification in accordance with DNV's Qualification Scheme CDM/JI (ICP-8-1-CDMJi-i1)

GHG Auditor:	Yes				
Technical Area	CDM Validator	CDM Verifier	Sector Expert	Methodology Expert	Technical Reviewer
Landfill gas					
Renewables					
Hydro power					
Wind power				Jan 2009	Jan 2009
Other renewable					
Biomass					
Grid connection of isolated system					
Cement					
Waste-heat / waste-gas recovery					
Efficiency of thermal power plants					
Coal mine methane					
Fuel switch					
Manure management					
Waste / wastewater treatment					
Energy efficiency					
N ₂ O					
HFCs					
Flare reduction					
PFCs					
Charcoal					
CO ₂ recovery					
Transport					
Non-renewable biomass					
Biofuel					
Pipeline leakage reduction					
SF ₆					

Høvik, 9 January 2009

Michael Lehmann

Michael Lehmann
Technical Director, Climate Change Services



CERTIFICATE OF COMPETENCE

Shu Yong Sun

Qualification in accordance with DNV's Qualification scheme for CDM/JI (ICP-9-8-i1-
CDMJ1-i1)

GHG Auditor:	Yes		
CDM Validator:	Yes	JI Validator:	--
CDM Verifier:	--	JI Verifier:	--
Industry Sector Expert for Sectoral Scope(s):	--		

Høvik, 12 March 2007

Einar Telnes
Director, International Climate Change Services

Michael Lehmann
Technical Director