



VALIDATION REPORT

INNER MONGOLIA BAYANNAOER CHUANJINGSUMU WIND POWER PROJECT IN CHINA

REPORT No. 2008-0598

REVISION No. 04



VALIDATION REPORT

DET NORSKE VERITAS
CERTIFICATION AS

*Climate Change Services
Veritasveien 1,
1322 HØVIK, Norway*
Tel: +47 67 57 99 00
Fax: +47 67 57 99 11
<http://www.dnv.com>

Date of first issue: 2008-04-23	Project No.: 63602362
Approved by: Miguel Rescalvo	Organisational unit: DNV Certification AS, International Climate Change Services
Client: Longyuan(Bayannaoer) Wind Power Co., Ltd	Client ref.: Mr. Han Jinlong

Project Name: Inner Mongolia Bayannaoer Chuanjingsumu wind power project
Country: China
Methodology: ACM0002
Version: 06
GHG reducing Measure/Technology: Grid-connected electricity generation from renewable sources (wind energy)
ER estimate: 128 117 tCO₂e/year
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 Bayannaoer Chuanjingsumu wind power project in China, as described in the PDD of 7 August 2008, meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria and correctly applies the baseline and monitoring methodology ACM0002, version 06. DNV thus requests the registration of the project as a CDM project activity.

Report No.: 2008-0598	Date of this revision: 2008-08-07	Rev. No. 04
Report title: Inner Mongolia Bayannaoer Chuanjingsumu wind power project in China		
Work carried out by: Jiandong Ma, Shuyong Sun, Michael Lehmann		
Work verified by: Kutty, Mathsy		

Key words:

**Climate Change
Kyoto Protocol
Validation
Clean Development Mechanism**

- ☒ No distribution without permission from the Client or responsible organisational unit
- ☐ Limited distribution
- ☐ Unrestricted distribution



VALIDATION REPORT

Abbreviations

BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
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
DRC	Development and Reform Commission
EF	Emission Factor
EIA	Environmental Impact Assessment
EPB	Environmental Protection Bureau
FSR	Feasibility Study Report
GHG	Greenhouse gas(es)
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
LoA	Letter of Approval
MP	Monitoring Plan
NCV	Net Calorific Value
NDRC	National Development and Reform Commission
NCPG	North China Power Grid
NGO	Non-governmental Organisation
ODA	Official Development Assistance
OM	Operating Margin
PDD	Project Design Document
PLF	Power Load Factor
SCE	Standard coal equivalent
UNFCCC	United Nations Framework Convention on Climate Change



VALIDATION REPORT

TABLE OF CONTENTS

1	EXECUTIVE SUMMARY – VALIDATION OPINION	5
2	INTRODUCTION	6
2.1	Objective	6
2.2	Scope	6
3	METHODOLOGY	7
3.1	Desk Review of the Project Design Documentation	7
-	<i>PDD is revised according to the resolutions of CAR(s) and CL(s).</i>	9
3.2	Follow-up Interviews with Project Stakeholders	9
3.3	Resolution of Outstanding Issues	10
3.4	Internal Quality Control	12
3.5	Validation Team	12
4	VALIDATION FINDINGS	13
4.1	Participation Requirements	13
4.2	Project Design	13
4.3	Baseline Determination	14
4.4	Additionality	15
4.5	Monitoring	19
4.6	Estimate of GHG Emissions	20
4.7	Environmental Impacts	21
4.8	Comments by Local Stakeholders	21
4.9	Comments by Parties, Stakeholders and NGOs	22

Appendix A: Validation Protocol

Appendix B: Certificates of Competence



VALIDATION REPORT

1 EXECUTIVE SUMMARY – VALIDATION OPINION

Det Norske Veritas Certification AS (DNV) has performed a validation of the “Inner Mongolia Bayannaoer Chuanjingsumu 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 from China confirmed that the project assists in achieving sustainable development.

The project correctly applies ACM0002 “consolidated methodology for grid-connected electricity generation from renewable sources” version 06 of 19 May 2006. By generating electricity from wind sources, 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 total emission reductions from the project are estimated to be on the average 128 117 tCO_{2e} per year over the first 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.

Adequate training and monitoring procedures have been implemented.

In summary, it is DNV’s opinion that the Inner Mongolia Bayannaoer Chuanjingsumu wind power project in China, as described in the PDD of 7 August 2008, meets all relevant UNFCCC requirement for the CDM and all relevant host party criteria and correctly applies the baseline and monitoring methodology ACM0002, version 06. DNV thus requests the registration of the project as a CDM project activity.



VALIDATION REPORT

2 INTRODUCTION

Longyuan(Bayannaoer) Wind Power Co., Ltd., has commissioned Det Norske Veritas Certification AS (DNV) to perform a validation of the project Inner Mongolia Bayannaoer Chuanjingsumu wind power project in China (hereafter called “the project”). This report summarises the findings of the validation of the project, performed on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM 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 team has, based on the recommendations in the Validation and Verification Manual /8/employed a risk-based approach, focusing on the identification of significant risks for project implementation and the generation of CERs.

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.



VALIDATION REPORT

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 FulinWindpower Development Corporation, Project Design Document for the “Inner Mongolia Bayannaoer Chuanjingsumu wind power project”, version 2.0, 25 August 2007 for web hosting and Version 04, 7 August 2008 for registration
- /2/ Letter of Approval issued by DNA of China in January 2008
- /3/ Letter of Approval issued by DNA of France on 31 March 2008
- /4/ Xinjiang Wind Power Design Graduate School (certificate NO. 301007-sy), The feasibility study report of Inner Mongolia Bayannaoer Chuanjingsumu wind power project in September 2006 and the approval letter by Development and Reform Commission of Inner Mongolia Autonomous Region on 11 April 2007 (IMDRC Energy [2007] No557)
- /5/ The EIA of Inner Mongolia Bayannaoer Chuanjingsumu wind power project on 10 October 2006 by Environment Scientific and Research Institute of Bayannaoer and the approval letter by Environmental Protection Bureau of Inner Mongolia Autonomous Region on 24 October 2006 (IMEPB Table [2006] No 89)
- /6/ Stakeholder registration records participating in project stakeholder forum on 10 August 2007 and Summary of stakeholder forum for Inner Mongolia Bayannaoer Chuanjingsumu wind power project
- /7/ 33 copies of Questionnaires of stakeholder consultation during July-August 2007
- /8/ International Emission Trading Association (IETA) & the World Bank’s Prototype Carbon Fund (PCF): *Validation and Verification Manual*.
- /9/ ACM0002”consolidated methodology for grid-connected electricity generation from renewable sources” version 06 of 19 May 2006
- /10/ CDM Executive Board: Tool for the demonstration and assessment of additionality, version 04, EB 36 meeting.
- /11/ China Electric Power Yearbooks 2002-2006
- /12/ China Energy statistics Yearbooks 2004-2006
- /13/ CDM EB, 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/UserManagement/FileStorage/AM_CLAR_QEJWJEF3CFBP1OZ



VALIDATION REPORT

AK6V5YXPQKK7WYJ

- /14/ Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories
- /15/ State Power Corporation of China. Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects. Beijing: China Electric Power Press, 2003
- /16/ Wind power turbine unit equipment purchasing agreement for Inner Mongolia Bayannaoer Chuanjingsumu wind power project on 15 July 2007--- technology specification
- /17/ Inner Mongolia Electric Power (group) Co., Ltd., Answer letter relating to Grid Access Application for Inner Mongolia Bayannaoer Chuanjingsumu wind power project by Longyuan (Bayannaoer) Wind Power Co., Ltd. 2 November 2006
- /18/ Parties to the Kyoto Protocol, <http://maindb.unfccc.int/public/country.pl?group=kyoto>
- /19/ 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
- /20/ Notice on strictly close fossil fuel fired power plants with low capacity, State Council (2007) No.2
- /21/ BM calculation from China National Development and Reform Commission <http://cdm.ccchina.gov.cn/webSite/CDM/UpFile/File1365.pdf>
- /22/ China regional electricity power grid baseline emission factor in 2007 <http://cdm.ccchina.gov.cn/webSite/CDM/UpFile/File1364.pdf>
- /23/ The permit to start construction of Inner Mongolia Bayannaoer Chuanjingsumu wind power project by Heilongjiang Pengyu Construction Supervising Co., Ltd., 8 June 2007
- /24/ The report "Appealed by the experts for controlling water due to shortage of water resource and pollution of water in Inner Mongolia" issued by Inner Mongolia morning daily, 7 June 2005 <http://www.ces.cn/html/2005-6/200567953231.shtml>
- /25/ Propositional letter regarding the on-grid for Inner Mongolia Bayannaoer Chuanjingsumu wind power project issued by Development and Reform Bureau of Wulatzhongqi County of Bayannaoer City, 27 February 2007
- /26/ The analysis for current price increasing and expectation for 2008 <http://finance.rj.com.cn/news/2008-03-28/000003465715.html>
- /27/ Tentative management measures for price and sharing of expenses for electricity generation from renewable energy, Document No. NDRC Price[2006]7. 4 January 2006 http://www.ndrc.gov.cn/jggl/zcfg/t20060120_57586.htm
- /28/ Chen Deming (vice minister of NDRC), the tariff of wind power still be determined by the scheme of tendering.
On the press conference of 4 September 2007 presided by the State Council Information Office
<http://finance.sina.com.cn/china/hgjj/20070905/11043948808.shtml>
- /29/ Shi Pengfei (Deputy Director, Chinese Wind Energy Association), Statistics on China Wind Farm Cumulative Installed Capacity in 2005, 2006 and 2007
- /30/ The progress of CDM project application approved by China DNA till 28 May 2008 <http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1839.pdf>
- /31/ The minutes of the Board of the Directors decision on CDM development, 12 March 2007



VALIDATION REPORT

- /32/ Report of solar PV high cost for power generation by Li Junfeng from Energy Research Institute of NDRC, China new energy power web, 18 June 2008
http://www.xnyfd.com/news_1.asp?id=56&nid=1&WorksID=4645
- /33/ Report of survey from cooperated team of NDRC, Ministry of Finance and State Electricity Regulatory Commission, reported dated 27 November 2007
http://jjckb.xinhuanet.com/cjxw/2007-11/27/content_75467.htm
- /34/ Inner Mongolia desertification, (China Desert) No 3 2002
<http://www.cnki.com.cn/Article/CJFD2002-ZGSS200203016.htm>
- /35/ Lack of water resource in Inner Mongolia
<http://www.ces.cn/html/2005-6/200567953231.shtml>

Main changes between the version published for the 30 days stakeholder commenting period and the final version submitted for registration:

- *The sensitivity analysis has been re-analysed to show the changes of four critical parameters (total investment, annual O&M costs, on-grid tariff and PLF) by determining the value at which the IRR will be equal to the benchmark (instead of analyzing $\pm 10\%$ fluctuation of three parameters only).*
- *The title of the project is changed from Inner Mongolia Bayannaoer Chuanjingsumu wind power project (II) to Inner Mongolia Bayannaoer Chuanjingsumu wind power project*
- *PDD is revised according to the resolutions of CAR(s) and CL(s).*

3.2 Follow-up Interviews with Project Stakeholders

On 5 November 2007, DNV performed an interview to resolve the issues identified during the desk review of the project design document. The representatives of China Fulin Windpower Development Corporation (consultant) and Longyuan (Bayannaoer) Wind Power Co., Ltd., were interviewed.

Table below shows the list of issues discussed during the site visits:

	Date	Name	Organization	Topic
/36/	2007-11-05	Mr.Han Jinlong	Longyuan (Bayannaoer) Wind Power Co., Ltd.,	<ul style="list-style-type: none"> - 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



VALIDATION REPORT

/37/ 2007-11-05

Mr.Hao Yufeng
Project managerChina Fulin
Windpower
Development
Corporation
(consultant)

process.

- 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 is to resolve any outstanding issues which need to be clarified prior to DNV's positive conclusion on the project design. In order to ensure transparency a validation protocol is 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;
- 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 Bayannaoer Chuanjingsumu 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.

VALIDATION REPORT

Validation Protocol Table 1: Mandatory Requirements for CDM Project Activities				
Requirement	Reference	Conclusion		
<i>The requirements the project must meet.</i>	<i>Gives reference to the legislation or agreement where the requirement is found.</i>	<i>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.</i>		

Validation Protocol Table 2: Requirement checklist				
Checklist Question	Reference	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
<i>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.</i>	<i>Gives reference to documents where the answer to the checklist question or item is found.</i>	<i>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.</i>	<i>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.</i>	<i>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.</i>

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
<i>If the conclusions from the draft Validation are either a CAR or a CL, these should be listed in this section.</i>	<i>Reference to the checklist question number in Table 2 where the CAR or CL is explained.</i>	<i>The responses given by the project participants during the communications with the validation team should be summarised in this section.</i>	<i>This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".</i>

Figure 1 Validation protocol tables



VALIDATION REPORT

3.4 Internal Quality Control

The draft validation report including the initial validation findings underwent a technical review before being submitted to the project participants. The final validation report underwent another technical review before requesting registration of the project activity. The technical review was performed by a technical reviewer qualified in accordance with DNV's qualification scheme for CDM validation and verification.

3.5 Validation Team

Role/Qualification	Last Name	First Name	Country
Team leader, GHG auditor	Ma	Jiandong	China
CDM validator	Sun	Shuyong	China
Technical reviewer	Kutty	Mathsy	India
Sector expert	Lehmann	Michael	Norway

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



VALIDATION REPORT

4 VALIDATION FINDINGS

The findings of the validation are stated in the following sections. 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 final validation findings relate to the project design as documented and described in the revised and resubmitted project design documentation, version 04 of 7 August 2008.

4.1 Participation Requirements

The project participants are Longyuan (Bayannaoer) Wind Power Co., Ltd., from China and EDF Trading Limited, from France.

The host Party, China and the Annex I Party France, meet all relevant participation requirements. China ratified the Kyoto Protocol on 30 August 2002 and France ratified on 31 May 2002. /18/

The DNA of China has issued a Letter of Approval /2/ in January 2008, authorizing Longyuan (Bayannaoer) Wind Power Co., Ltd., as project participant and also confirmed that the project contributes to China's sustainable development.

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

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

4.2 Project Design

The project involves installation and operation of 58 wind turbines in Chuanjingsumu, Wulatezhongqi, Bayannaoer League, Inner Mongolia Autonomous Region, China. The power generated from the project is expected to be imported to the north China power grid (NCPG). The physical boundary of the project includes the wind turbines and transmission system along with all the power plants that are physically connected to the NCPG /17/. The project's spatial boundaries are clearly defined/22/.

Based on the wind resource conditions, the project proponent has adopted G52-850 kW of Gamesa with an installed generation capacity each of 850 kW /16/, thus accounting to a total installed capacity of 49.3MW. The electricity delivered to the NCPG is expected to be 119.12 GWh per year at a plant load factor (PLF) of 27.6%. The feasibility study report (FSR) /4/ for the project discusses the fluctuation in the available wind speed and accordingly a conservative annual electricity generation and hours were selected as 119.12 GWh and 2416 hours has been arrived at. The installation also includes a central control room for control, measurement and surveillance of the wind farm /4//16/. The project applies state of the art technology. DNV was able to confirm the same against the FSR /4//16/.

The same project participants are developing the project "Inner Mongolia Bayannaoer Chuanjingsumu 49.3MW Wind Power Project", requesting registration with reference No. 1621 as a CDM project at the time of issuing of this report.



VALIDATION REPORT

The startind date of the project is 8 June 2007, date of approval of the construction permit /23/. The expected operational lifetime of the project activity is 20 years/1/ /4/. A renewable crediting period of 7 years has been chosen for the project, starting from 1 January 2009/1/.

The emission reductions are estimated to be 128 117 tCO₂e per year and 896 819 tCO₂e over the first seven-year crediting period./1/

4.3 Baseline Determination

The project applies the approved baseline methodology ACM0002 (version 06), titled “Consolidated methodology for grid-connected electricity generation from renewable sources”.

The applied baseline methodology is justified as it has been demonstrated that the project activity ensures that:

- It is a NCPG grid connected zero emission renewable power generation activity from wind energy./17/
- The project does not involve switching from fossil fuel to renewable energy at the project site./4/

The project boundary is clearly defined as the site of the project activity and the NCPG including the Beijing, Tianjin, Hebei, Shanxi, Shandong and Inner Mongolia Autonomous Region grids to which the project is physically connected. This is in line with the delineation of grid boundaries as provided by the DNA of China/22/. There are no significant transmission constraints between the power plants of the NCPG , and there is negligible electricity export or import between the NCPG and other connected grids.

The defined project boundary is in line with ACM0002 (version 06).

Emission sources and gases included in the project boundary are:

	GHGs involved	Description
Baseline emissions	CO ₂	The North China Power Grid
Project emissions	N/A	Project emission is regarded as zero as the project is a renewable energy (wind source) project.
Leakage	N/A	There are no leakages that need to be considered in applying this methodology.

The baseline scenario of the proposed project has been identified as the provision of an equivalent amount of annual power output by the North China Grid (NCPG) to which the project is connected. 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. This is reflected in the combined margin (CM) - the weighted average of the operating Margin (OM) emission factor and the build margin (BM) emission factor. The weighting is set respectively to 75% and 25%, the default values stipulated by ACM0002 (version 06) for wind power projects.



VALIDATION REPORT

The NCPG 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 NCPG 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 (version4)*” approved by the CDM-EB /10/.

It has been demonstrated by the chronological events that CDM revenues were considered for the project activity prior to start of construction.

- a) The feasibility study report (FSR) for the project activity was prepared by the Xinjiang Wind Power Design Graduate School in September 2006. The project IRR is 8.46% and resulted in the conclusion that the project is feasible /4/
- b) The propositional letter from the local Development and Reform Commission who is responsible for the power tariff management is issued to the proposed participant on 27 February 2007, which agreed a tariff that should not exceed 0.54 RMB/kWh (including VAT)./25/
- c) In view of the reduced tariff in the propositional letter /25/ as compared to the tariff of 0.5528 RMB/kWh (including VAT) considered in the FSR, the IRR for the project activity was affected, resulting in an IRR of 7.67%, which was below the benchmark of 8%.
- d) A meeting of the Board of Directors was held, on 12 March 2007, at which a resolution on the CDM development for the project was passed with statements that the project financing and construction will be based on the CDM development/31/
- e) On 11 April 2007, Development and Reform Commission of Inner Mongolia Autonomous Region on 11 April 2007 (IMDRC Energy [2007] No557) issued the approval letter for the FSR of the project./4/
- f) The construction permit was issued on 08 June 2007 by Heilongjiang Pengyu Construction Supervising Co., Ltd. /23/.
- g) The equipment purchase agreement was signed between the project proponent and the equipment provider on 15 July 2007/16/

All the relevant evidences supporting this information have been provided and verified by DNV.

The project starting date is selected as 08 June 2007 date of issuance of the construction permit by Heilongjiang Pengyu Construction Supervising Co., Ltd. /23/. It is DNV’s opinion that this is the correct date to represent the earliest of the dates among implementation, construction or real action of the project activity began. It has been verified that the equipment purchase agreement was signed between the project proponent and the equipment producer on 15 July 2007/16/. Through the above described events, it has been evidenced that the CDM benefits were taken into account before the decision to go ahead with the project.



VALIDATION REPORT

Step 1: Identification of the alternatives to the project activity consistent with the current laws and regulations.

The alternate scenarios identified for the project activity are:

- a) No project activity undertaken (continuation of current practice- equivalent capacity or electricity service provided by the NCPG);
- b) Construction of a thermal power plant of annual output equivalent to the proposed project.
- c) The proposed project itself, but not undertaken as a CDM project activity;
- d) Commercial renewable power plant of equivalent capacity to the proposed project.

The option b) does not comply with the Chinese law because coal-fired power plants with a capacity less than 135 MW are prohibited to be built in areas covered by large grids such as provincial grids/19/.and fossil fuel power plants with small capacity less than 50 MW are limited or prohibited to be built /20/ Scenario c) has excluded from being the baseline scenario due to the investment barriers discussed in the section below.

Scenario d) is not realistic as the other possible renewable energy source such as hydro, biomass, solar and geothermal energy in Inner Mongolia Autonomous Region. It has been argued that there are no usable water resources for the development of hydropower plants with the similar installed capacity as the proposed project in Inner Mongolia. DNV was able to confirm the same against the report, “Appealed by the experts for controlling water due to shortage of water resource and pollution of water in Inner Mongolia” issued by Inner Mongolia morning daily, 7 June 2005, <http://www.ces.cn/html/2005-6/200567953231.shtml> and the Chinese Electric power yearbooks 2002-2006/11/ /24/. Due to the technology development status and the high cost for power generation, biomass, solar PV and geothermal power generation with the similar installed capacity as the proposed project are little attractive investment in China. DNV was able to confirm the same against the report by Li Junfeng from Energy Research Institute of NDRC/32/, periodicals of China Desert and report of biomass barriers/33//34/, and relevant news of lacking of water resource in Inner mongolia/35/

Therefore, the only realistic and credible alternative for the project activity is option a) the equivalent capacity or electricity service provided by the NCPG .

Step 2: Investment analysis.

A benchmark analysis (Option III of Step 2 of tool for the demonstration and assessment of additionality) is selected for conducting the investment analysis.

In China an IRR of 8% for the total investment of a project is regarded as a benchmark for investments in new hydropower plants, fossil fuel fired plants and wind farm projects/15/. DNV was able to confirm this against the State Power Corporation of China, Interim rules on Economic Assessment of Electrical Engineering Retrofit Projects, Beijing: China Electric Power Press, 2003.

In line with the EB guidance in EB38 minutes of meeting paragraph (54), DNV was able to confirm that



VALIDATION REPORT

- a) All the input parameters used in the financial analysis, except tariff have been sourced from the FSR developed by Xinjiang Wind Power Design Graduate School in September 2006 and approved by Development and Reform Commission of Inner Mongolia Autonomous Region on 11 April 2007/4/. The electricity tariff of 0.54 RMB/kWh (including VAT) has been sourced from the propositional letter of Development and Reform Bureau of Wulatzhongqi County of Bayannaoer City dated 27 February 2007 /25/. The input parameters used in the financial analysis can thus be considered information provided by an independent and recognized source.
- b) Based on the data in the feasibility study report (FSR) /4/ and the tariff source mentioned above, the project IRR without CER revenues is estimated to be 7.67 %, which confirms that the project in the absence of CDM benefits is not financially attractive compared to the benchmark
- c) DNV has compared the input parameters for the financial analysis included in the PDD with the parameters stated in the FSR /4/ and above mentioned source /25/ and was able to confirm that the values applied are consistent with them. The electricity tariff information (27 February 2007) /25/ was available at the time when decision to proceed with the project was made on 8 June 2007 /23/. Furthermore, DNV confirmed that the taxes applied and depreciation in 15 years comply with the local regulations. The timeframe used in IRR analysis is 21 years for an operational lifetime of the project of 20 years and 1 year to prepare the project. Asset recovery accounts for 10% what is in line with the Chinese regulations.
- d) The FSR was approved on 11 April 2007 /4/ and thus only 2 months prior to the decision to proceed with the project activity which was on 8 June 2007/23/. Given this relative short period of time between approval of the FSR 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 FSR has been the basis of the decision to proceed with the investment in the project.
- e) The input parameters used in the financial analyses were compared with the data reported for other similar proposed CDM projects in the Inner Mongolia Autonomous Region, by comparing investment costs per MW, electricity tariff, PLF and percentage of O&M costs relative to total investment costs, etc. 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.

A sensitivity analysis has been carried out for parameters contributing more than 15% to revenues or costs. Reasonable variations of the total investment, annual operational costs, electricity output and on-grid tariff 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. The proponent carried out a sensitivity analysis taking variations in four critical parameters: total investment, annual operation and maintenance costs (O&M costs), on-grid tariff and the plant load factor (PLF). Furthermore, the value at which the IRR crosses the benchmark was analyzed to check for the likelihood of the same to make the project viable.

It was seen that on decreasing the total investment by 2.28%, the project IRR would exceed the benchmark. However, it is not likely the total investment will decrease by 2.28%, since



VALIDATION REPORT

majority of the total investment of the proposed project is used to purchase and install electric power equipments (wind turbines and transformers)/4/. DNV was able to confirm the same against the equipment purchase agreement /16/ and it was noted that a slight decrease in the investment cost by about 0.6% was seen. However, it is highly unlikely that the prices would decrease beyond this, considering the costs of civil works, have only been increasing over the years /4/. Furthermore, the evidence/26/ can show that the price for including the wind turbine equipment and commodities, have been increased enormously in 2008, it is not likely to decrease the total investment of the proposed project during construction period.

On decreasing the annual O&M cost by 10.4%, the project IRR exceeds the benchmark. According to the FSR of the proposed project, the detailed operation costs included maintenance costs, annual salaries for the employees, insurance premium of fixed assets and other costs. Since in the recent years, the price of material and salaries of the employees and tax rates are gradually increasing in China and the maintenance costs for accessorial equipments of wind turbines are also rising due to the wind turbines demand exceeding supply in China/26/, it is highly unlikely that the annual O&M cost will decrease for the proposed project. Hence the same has been eliminated.

The electricity tariff is a very important factor on project IRR. If it increases by 2.20%, the project IRR will begin to exceed the benchmark. However, according to China's Management Rules on Tariff issued by NDRC/27/, the tariff of the un-tendering wind power project is determined by the state government with reference to the tariff of tendering wind projects locally. In line with this, a similar tariff is expected to be enjoyed by the un-tendering wind power projects within the same grid, to reflect the principle of fair competition in the market. The proposed project as an un-tendering project, by the principle of implementing this government-guiding tariff, the project should enjoy no more than 0.54 Yuan/ kWh(including VAT), i.e. 0.4977 Yuan/kWh excluding VAT as stated by the local Development and Reform Commission propositional letter /25/. Furthermore, other evidences show that a decreasing trend can be expected, as it was seen on 4 September 2007 in a press conference held by the State Council Information Office, Chen Deming, NDRC were it was said that China would be taking measures to reduce in-grid tariff of wind power projects, through employing domestic wind turbines and using the scheme of tendering for wind power projects/28/. In this context, It is DNV's opinion that it is unlikely the tariff of the project have an increase in the future.

The annual electricity output (plant load factor, PLF) is a key parameter impacting the financing attractiveness of the project since the PLF reflects the annual electricity output. If the annual electricity output increases by 2.20%, the project IRR touches the benchmark. However, the annual electricity output depends on the wind speed of the project site at the specific wind turbine. As per the feasibility study report, the annual electricity output is estimated based on the data from April 2005 to March 2006, which data fluctuation are compared and consistent with the 20 years weather statistic data from 1986 to 2005 in the nearest wulatzhongqi weather station, which was obtained through the professional software WAsP to determine the richest wind source area, then using another software WindFarmer to optimize the location of each turbine in order to maximize power generation /4/. Moreover, the PLF value is positive correlation with the wind speed, the annual average wind speed of the project site tends to decrease and gradually be stable over the past 30 years from 1976 to 2005 in the nearest wulatzhongqi weather station for which data are available recently /4/. Therefore, it is DNV's opinion that there is not any evidence to support the option of the load factor increasing by 2.20%



VALIDATION REPORT

In conclusion, the investment analysis and sensitivity assessment have shown that the project activity is unlikely to be the most financially attractive option.

Step 2: Barrier analysis: This step has not been chosen.

Step 4: Common practice analysis:

The common practice analysis is done in Inner Mongolia Autonomous Region. Projects developed within the same region face a similar regulatory framework that make them comparable. It has been demonstrated by an analysis of the operating wind power plants located in Inner Mongolia Autonomous Region with the capacity from 25 MW to 75 MW/29/, that all projects developed from 2000 have applied for CDM project due to the similar investment barriers/financial unattractiveness as the proposed project, and there are not any non CDM projects. The analysis has been verified and is deemed to be acceptable/30/.

In summary, it is sufficiently demonstrated that the project is not a likely a baseline scenario and that emission reductions are hence additional.

4.5 Monitoring

The monitoring methodology selected complies with requirements of ACM0002, version 6.

4.5.1 Parameters determined ex-ante

The baseline carbon emission factor of the NCPG is determined from the published data of NDRC and is fixed ex-ante. The operating margin (OM) has been calculated from the emission data of 2003, 2004 and 2005. These are the three most recent years for which the data is available from NDRC. From these 3 years data, the simple OM for NCPG has been calculated to be 1.1208 tCO₂/MWh. The build margin (BM) has been calculated from the data available from NDRC for the year 2001-2005 to be 0.9397 tCO₂/MWh. As required by ACM0002 for wind energy, weight factors of 75% and 25% have been used for OM and BM respectively for the calculation of combined margin (CM). The combined margin emission factor has been calculated to be 1.0755 tCO₂/MWh and is fixed *ex-ante* for the first crediting period. All the data used in the calculations are publicly available data and the calculations are correct.

4.5.2 Parameters monitored ex-post

The net amount of electricity despatched by the Inner Mongolia Bayannaoer Chuanjingsumu wind power project to the NCPG grid will be monitored continuously. The third meter installed after the 35kW/220kW substation is used for key measurement of electricity supplied to the grid, the first and second meter fixed at the entrance of the substation is used for checking with the third meter due to the transmission losses. The fourth meter fixed with a back up line is used for measurement of importing from a back up line. So the net electricity supplied to the grid by the project should be obtained through the total exported generation subtract the total imported generation.

The net electricity exported to the grid will be reported on monthly basis and cross-checked with the invoices. All data will be archived for 2 years after the crediting period.

Since the project involves electricity generation from wind sources, no monitoring is required for project emissions or leakages due to the project activity.



VALIDATION REPORT

4.5.3 Management system and quality assurance

The responsibility of overall project management lies with Longyuan (Bayannaoer) Wind Power Co., Ltd., The monitoring of the project performance has been carried out by Longyuan (Bayannaoer) Wind Power Co., Ltd., which will provide for the training of the monitoring personnel. Longyuan (Bayannaoer) Wind Power Co., Ltd., will also be responsible for the review of reported results. The electricity meters installed under the project activity are approved by the Inner Mongolia Electric Power (group) Co., Ltd and deemed appropriate. The meters will be calibrated at a regular frequency according to DL/T448 - 2000. The electricity generation reports on joint meter reading are generated by Longyuan (Bayannaoer) Wind Power Co., Ltd., on monthly basis. All data from the monthly electricity records and sales receipts from Inner Mongolia Electric Power (group) Co., Ltd. used for facilitating cross-checking will also be archived until 2 years after the end of crediting period or last issuance of CERs.

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: baseline emissions (BE_y in tCO_2) are the product of the baseline emissions factor (EF_y in tCO_2/MWh) for the North China power grid (NCPG) 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
- 4) Emission reduction: $ER_y = BE_y - PE_y - L_y = BE_y$

The baseline emission factor for the project is determined *ex-ante* as a combined margin, consisting of combination of the operating margin (OM) and build margin (BM).

Because plant specific fuel consumption and electricity generation data is not public available in China, DNV requested guidance from the CDM Executive Board for a deviation of the baseline methodology for AM0005 and received the following guidance/13/ which is deemed to also be applied to ACM0002.

- Use of capacity additions for estimating the build margin emission factor for grid electricity.
- Use of weights estimated using installed capacity in place of annual electricity generation.
- Use 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 to estimate the build margin (BM).

The aggregated generation and fuel consumption data are used due to the more disaggregated data are not available in the NCPG. Country specific data for net calorific value ($NCVi$) of each type of fossil fuel, the IPCC 2006 default value of oxidation factor of each type of fossil fuel and the total electricity delivered to the NCPG selected are deemed reasonable. Vintage



VALIDATION REPORT

data for the years 2003, 2004 and 2005 are used for operating margin calculation. The OM is calculated to be 1.1208 tCO₂/MWh as a generation-weighted average for the three years.

Since AM0005 has been replaced by ACM0002, the application of the above confirmation from EB to this project is deemed to be acceptable.

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

- The capacity additions from the years 2003 to 2005 is chosen and reach 23.8% of total installed capacity.
- The weight of installed capacity additions for thermal power plant is accounted for 99.28% of total installed capacity additions.
- The standard coal consumption of 343.33 g SCE/kWh (i.e. an efficiency of 35.82%) for coal-fired power plant and 258 gSCE/kWh (i.e. an efficiency of 47.67%) for oil/gas power plant are used to determine the BM emission factor, which is defined as the best technology commercially available in China by the DNA of China/21/.
- The local net caloric value of fuels from the China Energy Statistical Yearbook from 2004 to 2006, the default value such as the fuel emission factors and the carbon oxidation factor of 100% from the IPCC 2006 are used to calculate the BM.
- The BM is calculated as 0.9397 tCO₂/MWh.

The weights ω_{OM} and ω_{BM} are selected as 0.75 and 0.25, respectively, as stipulated for wind projects by ACM0002 (version 06). The combined margin of 1.0755 tCO₂/MWh is fixed *ex-ante* for the entire first crediting period. The latest data used to calculate OM and BM are derived from China Energy Statistical Yearbooks 2004, 2005, 2006 /12/and China Power Electric Power Yearbooks 2002 to 2006/11/.

The GHG calculations are complete and transparent, and their accuracy has been verified. The emission reductions from the project are real and measurable. Provided the underlying assumptions do not change, the project is likely to reduce 128 117 tCO₂e per annum during its first-seven year crediting period.

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 has approved the project activity on 24 October 2006/5/.

4.8 Comments by Local Stakeholders

Besides the stakeholder consultation process stipulated in the Chinese EIA regulation, the project owner successfully held a stakeholders conference on 10 August 2007/6/. Total 30 stakeholder representatives from the local Development and Reform Bureau, the local Environmental Protection Bureau, the local Power Supply Corporation, Wulatzhongqi Chuanjingsumu village, etc. attended meeting. Also a public survey was conducted on the local residents through distributing and collecting responses to the questionnaires between July and August 2007 (33 questionnaires collected)/7/. There were no adverse comments on



VALIDATION REPORT

the project activity and 100% of the respondents agree with the development of the project. All the questionnaires with comments have been verified by DNV.

4.9 Comments by Parties, Stakeholders and NGOs

The PDD of 25 August 2007 was made publicly available on DNV's climate change website (http://www.dnv.com/focus/climate_change/projects/projectdetails.asp?ProjectId=1444) and Parties, stakeholders and NGOs were through the CDM website invited to provide comments during a 30 days period from 11 September 2007 to 10 October 2007.

No comment was received during this period.



VALIDATION REPORT

APPENDIX A

CDM VALIDATION PROTOCOL



VALIDATION REPORT

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

Requirement	Reference	Conclusion
About Parties		
1. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3.	Kyoto Protocol Art.12.2	OK
2. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC.	Kyoto Protocol Art.12.2.	OK
3. 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
4. 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
5. 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
6. Parties participating in the CDM shall designate a national authority for the CDM.	CDM Modalities and Procedures §29	OK
7. The host Party and the participating Annex I Party shall be a Party to the Kyoto Protocol.	CDM Modalities §30/31a	OK
8. The participating Annex I Party's assigned amount shall have been calculated and recorded.	CDM Modalities and Procedures §31b	OK
9. The participating Annex I Party shall have in place a national system for	CDM Modalities and Procedures §31b	OK



VALIDATION REPORT

Requirement	Reference	Conclusion
estimating GHG emissions and a national registry in accordance with Kyoto Protocol Article 5 and 7.		
About additionality		
10. 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		
11. 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		
12. 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		
13. 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
14. Parties, stakeholders and UNFCCC accredited NGOs shall have been invited to comment on the validation requirements for minimum 30 days, and the project design document and comments have been made publicly available.	CDM Modalities and Procedures §40	OK



VALIDATION REPORT

Requirement	Reference	Conclusion
Other		
15. The baseline and monitoring methodology shall be previously approved by the CDM Executive Board.	CDM Modalities and Procedures §37e	OK
16. 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
17. 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
18. The project design document shall be in conformance with the UNFCCC CDM-PDD format.	CDM Modalities and Procedures Appendix B, EB Decision	OK
19. 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



VALIDATION REPORT

Table 2 Requirements Checklist

CHECKLIST QUESTION		Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
* MoV = Means of Verification, DR= Document Review, I= Interview						
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/ /4/	DR I	Yes. The project is located in northeast of Chuanjingsumu, Wulatezhongqi, Bayannaoer League, Inner Mongolia Autonomous Region China. Exact coordinates for its location are given.		OK	
A.1.2. Are the project’s system boundaries (components and facilities used to mitigate GHGs) clearly defined?	/1/ /4/ /17/ /22/	DR I	The North China (regional) power grid (NCPG) which the proposed project is connected to and the project site are defined as the project system boundary./4//17/, whose delineation is published by the DNA of China /22/.		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>						

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview		Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A.2.1. Which Parties and project participants are participating in the project?		/1/	DR	The project participants are Longyuan (Bayannaoer) Wind Power Co., Ltd., from China as a host Party and EDF Trading Limited, from France as an Annex I Party.		OK
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 I	The letters of approval from the DNA of both China and France have not been obtained.	CAR-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/ /18/	DR	China ratified the Kyoto Protocol on 30 August, 2002. France ratified the Kyoto Protocol on 31 May 2002. Both Parties participate in the CDM on a voluntary basis. Both Parties involved have designated national authorities for the CDM. Chinese DNA is the National Development and Reform Commission (NDRC). DNA of France is <u>Mission interministérielle de l'effet de serre (MIES)</u> and <u>Ministère des Affaires étrangères</u> .		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/ /4/	DR I	The validation did not reveal any information that indicates that the project can be seen as a diversion of official development assistance		OK

* MoV = Means of Verification, DR= Document Review, I= Interview

VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview		Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
				(ODA) funding towards China.		
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	Yes. The project design engineering reflects current good practices in China.		OK
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/ /16/	DR I	Yes. The wind turbines applied are G52-850kW of Gamesa wind turbines described in the PDD as per the technology specification of equipment purchasing agreement/16/.		OK
A.3.3. Does the project make provisions for meeting training and maintenance needs?		/1/	DR I	Provision for meeting training and maintenance needs has not been evidenced	CL1	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	This shall be confirmed once the LoA is received from the host Party.	CAR1	OK

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
A.4.2. Will the project create other environmental or social benefits than GHG emission reductions?	/1/ /4/ /5/	DR I	Yes. The project will, among others benefits, mitigate local environmental pollution caused by coal-fired power plants, create local employment opportunity and help promote the development of local tourism industry		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>					
B.1.1. Does the project apply an approved methodology and the correct version thereof?	/1/ /9/	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/ /9/	DR I	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. The project is a new wind power plant which uses renewable energy to generate electricity supplied to NCPG The geographic and system boundaries for the relevant electricity grid can be		OK

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview		Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
				clearly identified and information on the characteristics of the grid is available.		
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		Electricity delivered to the grid by the project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described below.		OK
B.2.2. What other alternative scenarios have been considered and why is the selected scenario the most likely one?	/1/	DR		The alternative baseline scenarios are, a) The proposed project not undertaken as a CDM project activity but as a commercial project; b) A coal fuel plant with the same capacity or the same annual electricity output as the proposed project; c) Another renewable energy power plant with the same capacity or the same annual electricity output as the proposed project; d) The NCPG as the provider for the same		OK

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			<p>capacity and electricity output as the proposed project.</p> <p>The coal fuel-fired 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.</p> <p>Other renewable resources that can be utilized on site at the project are very limited and are not able to provide a comparable output or the same services as the proposed project, but the evidences or further information on the other renewable resources alternatives is to be elaborated in the PDD.</p> <p>The proposed project activity not undertaken as a CDM project activity is not a realistic and credible alternative, as discussed in the investment analysis below.</p> <p>Thus the baseline scenario is identified as a comparable capacity or electricity generation addition provided by NCPG .</p>	CL-2	
B.2.3. Has the baseline scenario been determined according to the methodology?	/1/	DR	Yes.		OK

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
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 I	Yes. The renewable energy law, sectoral policy and development trends in NCPG 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	This is to be confirmed after the CL-2 has been clarified	CL-2	OK
B.2.7. Have the major risks to the baseline been identified?	/1/	DR I	The project proponent is required to elaborate on how the availability of the wind for the project to operate for the entire crediting period has been evaluated.	CL-3	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/ /10/ /15/	DR I	The project additionality is demonstrated by applying the “Tool for the demonstration and assessment of additionality” Version 03. <i>Step 1: Identification of the alternatives to the project activity consistent with the</i>		OK

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			<p><i>current laws and regulations.</i></p> <p>The only realistic and credible alternative for the proposed project is the equivalent capacity or electricity service provided by the NCPG according to the above B2.2 discussion.</p> <p><i>Step 2: Investment analysis.</i></p> <p>Benchmark analysis (Option III) is justified to conduct the investment analysis.</p> <ul style="list-style-type: none"> - 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/15/. - the differences between IRR calculated in the PDD and one in the FSR is to be explained in a transparent manner. And the electricity tariff evidence is to be provided - <p>The assumptions like investment, O&M costs, tariff, VAT, etc used for the IRR calculations need to be justified with relevant</p>	CL4	CL5

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
			<p>data sources.</p> <p>A sensitivity analysis needs to address the following points:</p> <ul style="list-style-type: none"> i) The annual electricity generation (PLF) for the plant needs to be included in the sensitivity analysis. ii) For each key indicator, the value at which the IRR will reach the benchmark of 8% and assessment for the likelihood of the parameter having this value to confirm that it is not likely that the IRR will become equal to the benchmark needs to be carried out iii) The justification provided for the justifying that possibility of increase in tariff does not suffice. The same needs to be elaborated and justified with documentary evidence. <p><i>Step 3: Barrier analysis.</i> The proposed project does not adopt barrier analysis.</p> <p><i>Step 4: Common practice analysis.</i> The common practice shows that the similar</p>	CL6	

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview		Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
				wind farms existing in Inner Mongolia Autonomous Region are either demonstration project, enjoying favourable financial policy or have applied for CDM project as facing the same investment barrier and financial unattractiveness as the proposed project. Five have been registered as or applied for CDM projects successfully among them		
B.3.2. Are all assumptions stated in a transparent and conservative manner?	/1/	DR	Ditto		CL4 CL5 CL6	OK
B.3.3. Is sufficient evidence provided to support the relevance of the arguments made?	/1/	DR	Ditto	.	CL4 CL5 CL6	OK
B.3.4. If the starting date of the project activity is before the date of validation, has sufficient evidence	/1/	DR I	1. The project proponent has defined the		CL7	OK

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
been provided that the incentive from the CDM was seriously considered in the decision to proceed with the project activity?			<p>start date of the project activity as the date of the construction permit, which is 08 June 2007. The documentary evidence for the same needs to be provided to DNV.</p> <p>2. Also, it needs to be confirmed when the PP placed the purchase order for the equipments. The same needs to be submitted.</p> <p>3. Additionally, the project proponent is also required to substantiate with documented evidence that CDM incentives, played an important role in the decision to go ahead with the project.</p>		
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/ /9/	DR	Project emission is regarded as zero as the project is a renewable energy (wind source) project. /9/		OK

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
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/ /9/ /11/ /12/ /13/ /14/	DR	<p>Yes. Baseline emissions are calculated as the net electricity generated from the renewable source times the NCPG emission factor.</p> <p>Auxiliary energy used for the operation of the plant is subtracted from the power generation when the net electricity generated from the project is used for the calculations.</p> <p>The grid emission factor is correctly calculated in line with ACM0002 as a combined margin (CM), consisting of the combination of operating margin (OM) and build margin (BM).</p>		OK
B.5.2. Have conservative assumptions been used when	/1/	DR	Ditto		OK

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
calculating the baseline emissions?					
B.5.3. Are uncertainties in the baseline emission estimates properly addressed?	/1/	DR	Ditto		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/ /9/	DR	There are no leakages that need to be considered in applying this methodology. /9/		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</i>					

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview		Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
<i>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. Given that the project is implemented under the above said conditions, it is estimated to reduce CO ₂ emissions by 128 117 tCO ₂ e/year average over the crediting period.		OK
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/ /9/	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 has been applied 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>						

* MoV = Means of Verification, DR= Document Review, I= Interview

VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview		Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
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/ /9/	DR		There are no emissions from the project activity.		OK
B.9.2. Are the choices of project GHG indicators reasonable and conservative?	/1/	DR		Ditto		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 necessary for determining baseline emissions during the crediting period?	/1/	DR I		The project uses the <i>ex-ante</i> determination of emission factor for grid electricity. Only electricity supplied to the grid will be monitored and double checked with the invoice of electricity sold to the grid.		OK
B.10.2. Are the choices of baseline GHG indicators reasonable and conservative?	/1/ /9/	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 the electricity meters both in the substation and the Bayannaer wind farm.	CL-8	OK

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview		Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
				However, the PDD is not clear as to which meter is used to recording the electricity generation. Is it the key meter / second meter same as the main meter?? Also, a metering diagram is to be provided.		
B.10.4. Is the measurement <i>equipment</i> described and deemed appropriate?	/1/	DR	ditto		CL8	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 equipment are calibrated and checked annually to ensure accuracy (not exceeding +0.2% of full-scale rating). But procedures to deal with erroneous measurements have not been in place. Also, the standards against which the meters are calibrated need to be included in the PDD.		CL9	OK
B.10.6. Is the measurement <i>interval</i> for baseline data identified and deemed appropriate?	/1/	DR	The electricity supplied to the grid will be measured continuously and recorded monthly in conformance with monthly receipts as per ACM0002./9/			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.			OK

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview		Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
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	Yes.		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.11.2. Are the choices of project leakage indicators reasonable and conservative?		/1/	DR	Ditto		OK
B.11.3. Is the measurement method clearly stated for each leakage value to be monitored and deemed appropriate?		/1/	DR	Ditto		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</i>						

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
<i>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 stated national priorities in the Host Country?	/1/	DR	Yes. This will be based on local authority decision.		OK
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	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	No. The procedures for monitoring personnel training have not been identified.	CL4	OK

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview	Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
B.13.3. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	/1/	DR I	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	Yes. A procedure for internal audit on reading and reporting has been identified.		OK
B.13.5. Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	/1/	DR	Procedures need to be defined for corrective actions in order to provide for more accurate future monitoring and reporting.	CL-10	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/	DR I	The starting date of the project is to be confirmed after CL-7 is clarified The estimated operational lifetime of the project is 21 years in the PDD. What is the operational lifetime for the project defined in the technical specifications of the technology provider?	CL-7 CL-11	OK
C.1.2. Is the start of the crediting period clearly defined	/1/	DR	The project proponent has selected a	CL-12	OK

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview		Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
and reasonable?			I	renewable crediting period of 7 years, with the starting date as 01 July 2008. The same needs to be revised		
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/ /5/	DR		Yes. The environmental impacts during construction and operation are elaborated in the PDD and EIA, mainly about impacts of waste water, noise and solid waste on environment./5/		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. on 24 October 2006		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./5/		OK
D.1.4. Are transboundary environmental impacts considered in the analysis?	/1/ /5/	DR		There are no transboundary environmental impacts foreseen for the project.		OK

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview		Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
D.1.5. Have identified environmental impacts been addressed in the project design?	/1/	DR	Yes.			OK
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/ /6/ /7/	DR I	Yes. Besides the stakeholder consultation process required by Chinese EIA regulations, an additional stakeholder consultation process have been performed through invite comment the project activity.local residents and local government departments for environment , economic development and science and technology./7/			OK
E.1.2. Have appropriate media been used to invite comments by local stakeholders?	/1/ /6/ /7/	DR I	On 10 August 2007, the staff from Longyuan (Bayannaoer) Wind Power Co., Ltd. carried out a consultation with the local community and the local government. The staff also carried out a survey on the local villagers and residents in the area.			OK

* MoV = Means of Verification, DR= Document Review, I= Interview



VALIDATION REPORT

CHECKLIST QUESTION * MoV = Means of Verification, DR= Document Review, I= Interview		Ref.	MoV*	COMMENTS	Draft Concl.	Final Concl.
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	Yes. The stakeholder consultation process is in accordance with Chinese EIA regulations.		OK
E.1.4.	Is a summary of the stakeholder comments received provided?	/1/	DR I	Yes. A summary of the stakeholder comments received described in the PDD.		OK
E.1.5.	Has due account been taken of any stakeholder comments received?	/1/	DR I	100% of the respondents selected agree with the development of the project activity.		OK

* MoV = Means of Verification, DR= Document Review, I= Interview

VALIDATION REPORT

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
<p>CAR 1</p> <p>The letters of approval from the DNA of China and France have not been obtained.</p>	<p>A2.2</p> <p>A4.1</p>	<p>The letters of approval from the DNA of China and the France, together with the MoC, have been provided.</p>	<p>The LoA issued by DNA of China in January 2008 and the LoA issued by DNA of the France on 31 March 2008 have been received and confirmed by DNV./2//3/</p> <p>China as the host Party has confirmed the project can assist it in achieving sustainable development./2/</p> <p>This CAR is closed</p>
<p>CL 1</p> <p>a) Provisions for ensuring that the training and maintenance needs are met need to be defined.</p>	<p>A3.3</p> <p>B13.2</p>	<p>Provisions for ensuring the training and maintenance have been clearly defined in the EPA, so it has been explained in Page 5 of the PDD, and the evidence has been provided to DOE.</p>	<p>DNV was able to verify them.</p> <p>This CL is closed</p>
<p>CL 2</p> <p>Evidences or further information to justify that the other renewable like solar PV, biomass and geothermal technology can not be the baseline owing to the development status and the high cost for power generation needs to be provided.</p>	<p>B2.2</p> <p>B2.6</p>	<p>The elimination of solar PV, geothermal and biomass alternatives from baseline scenario selection has been justified by providing more evidences in Page 10 of the PDD, and the Evidences have been provided to DOE.</p>	<p>DNV was able to verify that they are elaborated in the PDD and reasonable.</p> <p>This CL is closed</p>



VALIDATION REPORT

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
<p>CL 3</p> <p>The availability of wind for the project to operate at the rated PLF, for the entire crediting period needs to be confirmed</p>	B.2.7	<p>Based on the long-term wind data, there has been a stable wind condition over the last 20 years and it is suitable to develop wind power project in the region, and in PP' opinion, the availability of the wind for the project to operate for the entire crediting period has been evaluated, as in Page 5 of the PDD, and the evidence has been provided to DOE.</p>	<p>DNV was able to verify that they are revised in the PDD and reasonable.</p> <p>This CL is closed</p>
<p>CL 4</p> <p>The differences between IRR calculated in the PDD and one in the FSR is to be explained in a transparent manner. And the electricity tariff evidence is to be provided</p>	B.3.1 B.3.2 B.3.3	<p>The reason of the difference between the IRR in the PDD and in the FSR is that the government-guiding tariff has been used. The relevant documentary evidences have been submitted to DOE.</p>	<p>DNV was able to verify that they are revised in the PDD and reasonable.</p> <p>This CL is closed</p>

VALIDATION REPORT

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
<p>CL 5</p> <p>The assumptions like investment, O&M costs, tariff, VAT, etc used for the IRR calculations need to be justified with relevant data sources.</p>	<p>B.3.1</p> <p>B.3.2</p> <p>B.3.3</p>	<p>The data source for the IRR calculation are sourced from FSR except the tariff, and the evidences have been submitted to DOE.</p>	<p>DNV was able to verify that they are revised in the PDD and reasonable.</p> <p>This CL is closed</p>
<p>CL 6</p> <p>A sensitivity analysis needs to address the following points:</p> <p>a) The annual electricity generation (PLF) for the plant needs to be included in the sensitivity analysis.</p> <p>b) For each key indicator, the value at which the IRR will reach the benchmark of 8% and assessment for the likelihood of the parameter having this value to confirm that it is not likely that the IRR will become equal to the benchmark needs to be carried out</p> <p>c) The justification provided for the justifying that possibility of increase in tariff does not suffice. The same needs to be elaborated and justified with documentary evidence.</p>	<p>B.3.1</p> <p>B.3.2</p> <p>B.3.3</p>	<p>i. A sensitivity analysis on the PLF has been included in Page 13 of the PDD;</p> <p>ii. The analysis on the value of each key indicator at which the IRR will reach the benchmark of 8% and the likelihood have been carried out in Page 14 of the PDD;</p> <p>iii. The possibility of increase in tariff has been justified in Page 14 of the PDD, as shown that it is very unlikely.</p>	<p>DNV was able to verify that they are revised in the PDD and reasonable.</p> <p>This CL is closed</p>

VALIDATION REPORT

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
<p>CL 7</p> <p>1. The project proponent has defined the start date of the project activity as the date of the construction permit, which is 08 June 2007. The documentary evidence for the same needs to be provided to DNV.</p> <p>2. Also, it needs to be confirmed when the PP placed the purchase order for the equipments. The same needs to be submitted.</p> <p>3. Additionally, the project proponent is also required to substantiate with documented evidence that CDM incentives, played an important role in the decision to go ahead with the project.</p>	<p>B.3.4 C.1.1</p>	<p>1. The start date of the project activity as the date of the construction permit, which should be 08 June 2007. The documentary evidence has been provided to DNV.</p> <p>2. It was on 15 July, 2007 when the PP placed the purchase order for the equipments, the EPA has been provided to DOE.</p> <p>3. The documentary evidences about CDM incentives include 1. The CDM Consideration in the FSR; 2. A resolution passed at a meeting of the Board of directors. The evidences have been provided to DOE.</p>	<p>DNV was able to verify that the starting date defined as the date of construction permit is reasonable since the date is the earliest date at which the project activity began. And the permit and EPA documentary evidences are received and verified</p> <p>The CDM incentives consideration is clarified reasonably.</p> <p>This CL is closed</p>
<p>CL 8</p> <p>The PDD is not clear as to which meter is used to recording the electricity generation. Is it the key meter/second meter same as the main meter?? Also, a metering diagram is to</p>	<p>B.10.3 B.10.4</p>	<p>The metering flow diagram has been added in the PDD in Page 31, and has been provided to DOE.</p> <p>The monitoring plan has been revised, which includes the clear arrangement</p>	<p>DNV was able to verify that they are revised in the PDD and reasonable.</p> <p>This CL is closed</p>



VALIDATION REPORT

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
be provided.		for the meters.	
CL 9 the procedures to deal with erroneous measurements have not been in place. Also, the standards against which the meters are calibrated need to be included in the PDD.	B.10.5	The procedures to deal with erroneous measurements have been in place in the monitoring plan in Page 31. The standard against which the meters are calibrated has been added in Page 31 of the PDD.	DNV was able to verify that they are revised in the PDD and reasonable. The standard DL/T448 - 2000 against which the meters are calibrated has been added in the monitoring plan in the PDD. This CL is closed
CL 10 Procedures need to be defined for corrective actions in order to provide for more accurate future monitoring and reporting.	B.13.5	Procedures have been defined for corrective actions in order to provide for more accurate future monitoring and reporting in Page 31 of the PDD.	DNV was able to verify that they are revised in the PDD and reasonable. This CL is closed
CL 11 What is the operational lifetime for the project defined in the technical specifications of the technology provider?	C.1.1	The operational lifetime for the project defined in the technical specifications is 20 years, which has been used both in the FSR and PDD.	DNV was able to verify that they are revised in the PDD and reasonable. This CL is closed
CL 12 The project proponent has selected a renewable crediting period of 7 years, with the starting date as 01 July 2008. The same needs to be revised	C.1.2	The starting date of the first crediting period has been revised to 01 Jan. , 2009 as shown in Page 34 of the PDD.	DNV was able to verify that they are revised in the PDD and reasonable. This CL is closed

APPENDIX B

CERTIFICATES OF COMPETENCE



CERTIFICATE OF COMPETENCE

Michael Lehmann

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:	Yes	JI Verifier:	--
Industry Sector Expert for Sectoral Scope(s):	Sectoral scope 1, 2, 3		
Technical Reviewer for (group of) methodologies:			
ACM0001, AM0002, AM0003, AM0010, AM0011, AM0012, AMS-III.G	Yes	AM0027	Yes
ACM002, AMS-I.A-D, AM0019, AM0026, AM0029, AM0045	Yes	AM0030	Yes
ACM003, ACM0005, AM0033, AM0040	Yes	AM0031	Yes
ACM0004, ACM0012	Yes	AM0032	Yes
ACM0006, AM0007, AM0015, AM0036, AM0042	Yes	AM0035	Yes
ACM0007	Yes	AM0038	Yes
ACM0008	Yes	AM0041	Yes
ACM0009, AM0008, AMS-III.B	Yes	AM0034	Yes
AM0006, AM0016, AMS-III.D, ACM0010	Yes	AM0043	
AM0009, AM0037	Yes	AM0046	
AM0013, AM0022, AM0025, AM0039, AMS-III.H, AMS-III.I	Yes	AM0047	
AM0014	Yes	AMS-II.A-F, AM0044	Yes
AM0017	Yes	AMS-III.A	Yes
AM0018	Yes	AMS-III.E, AMS-III.F	Yes
AM0020	Yes		
AM0021, AM0028, AM0034, AM0051	Yes		
AM0023	Yes		
AM0024	Yes		

Høvik, 5 February 2007

Einar Telnes
Director, International Climate Change Services

Michael Lehmann
Technical Director



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

Jian Dong Ma

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

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

Høvik, 30 October 2007

Michael Lehmann
Technical Director, International Climate Change Service



CERTIFICATE OF COMPETENCE

Mathsy Kutty

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

<i>GHG Auditor:</i>	Yes		
<i>CDM Validator:</i>	Yes	<i>JI Validator:</i>	--
<i>CDM Verifier:</i>	--	<i>JI Verifier:</i>	--

Industry Sector Expert for Sectoral Scope(s):

Technical Reviewer for (group of) methodologies:

ACM002, AMS-IA-D, AM0019, AM0026, AM0029, AM0045	Yes
---	-----

Høvik, 2 May 2008

Michael Lehmann

Michael Lehmann

Technical Director, Climate Change Services