



VALIDATION REPORT

NINGXIA TIANJING 50.25 MW WIND-FARM PROJECT IN CHINA

REPORT No. 2006-1769

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DET NORSKE VERITAS



VALIDATION REPORT

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Summary:

Det Norske Veritas Certification Ltd. (DNV) has performed a validation of the “Ningxia Tianjing 50.25 MW Wind-farm Project” in China on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM modalities and procedures and the subsequent decisions by the CDM Executive Board. This draft validation report summarizes the initial findings of the validation.

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

In summary, it is DNV’s opinion that the “Ningxia Tianjing 50.25 MW Wind-farm Project in China” as described in the project design document version TJWi-06 dated 24 January 2007, meets all relevant UNFCCC requirements for the CDM and correctly applies the approved baseline and monitoring methodology ACM0002 version 06. Hence, DNV requests the registration of the “Ningxia Tianjing 50.25 MW Wind-farm Project in China” as a CDM project activity.

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Abbreviations

BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CEF	Carbon Emission Factor
CER	Certified Emission Reduction
CL	Clarification request
CM	Combined Margin
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DNV	Det Norske Veritas
DNA	Designated National Authority
GHG	Greenhouse gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
MVP	Monitoring and Verification Plan
NPPG	Ningxia Region (provincial) PowerGrid
NWRG	North-West Regional Power Grid
NGO	Non-governmental Organisation
ODA	Official Development Assistance
OM	Operating Margin
PDD	Project Design Document
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention on Climate Change



1 INTRODUCTION

Chubu Electric Power Co., Inc. has commissioned DNV to validate the “Ningxia Tianjing 50.25 MW Wind-farm Project” (the project) in China. This report summarises the initial findings of the validation of the project, performed on the basis of UNFCCC criteria for CDM projects, as well as criteria given to provide for consistent project operations, monitoring and reporting.

The validation team consists of the following personnel:

Akira Sekine	DNV Japan	Team Leader, CDM validator
Wei Min Wilson Tang	DNV China	CDM validator
Michael Lehmann	DNV Norway	Energy sector expert
Einar Telnes	DNV Norway	Technical reviewer

1.1 Validation 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).

1.2 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. The validation team has, based on the recommendations in the Validation and Verification Manual /11/, and 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.

1.3 Description of Proposed CDM Project

The project consists of construction and operation of a wind farm in Eastern Changcheng of southwest Helanshan, northwest Ningxia Autonomous Region, P. R. China. The objective of the project is to generate renewable electricity using power resources and to sell the generated electricity to the Ningxia power grid, which is part of a China North-West Regional Power Grid (NWRG) on the basis of power purchase agreement (PPA). The project will have a total installed capacity of 50.25 MW, represented by 67 wind turbines of 750 MW generating capacity respectively. At full capacity, the wind farm is projected to generate 98.241GWh electricity annually and to sell 95.294 GWh to the NWRG. A power purchase agreement (PPA) has been signed between the project owner and Ningxia Electric Power Company.

The estimated annual average emission reductions for the first crediting period are 92 355 tCO₂e.



2 METHODOLOGY

The validation consisted of the following three phases:

- I a desk review of the project design, baseline and monitoring plan (1-13 August 2006)
- II follow-up interviews with project stakeholders (14 August 2006)
- III The resolution of outstanding issues and the issuance of the final validation report and opinion.

In order to ensure transparency, a validation protocol was customised for the project, according to the Validation and Verification Manual./9/ The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from validating the identified criteria. The validation protocol serves the following purposes:

- It 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 Figure 1.

The validation protocol for the “Ningxia Tianjing 50.25 MW Wind-farm Project in China” is enclosed in Appendix A to this report.

Findings established during the validation can either be seen as a non-fulfilment of validation 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 or host Party 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.

Request for *Clarifications* are used where additional information is needed to fully clarify an issue.



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Validation Protocol Table 1: Mandatory Requirements for CDM Project Activities			
Requirement	Reference	Conclusion	Cross reference
<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>	<i>Used to refer to the relevant checklist questions in Table 2 to show how the specific requirement is validated. This is to ensure a transparent Validation process.</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 1 are linked to checklist questions the project should meet. The checklist is organised in seven different sections. Each section is then further sub-divided. The lowest level constitutes a checklist question.</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 Requests and Requests for Clarification			
Draft report corrective action requests and requests for clarifications	Ref. to Table 2	Summary of project participants' response	Final conclusion
<i>If the conclusions from the draft Validation are either a Corrective Action Request or a Clarification Request, these should be listed in this section.</i>	<i>Reference to the checklist question number in Table 2 where the Corrective Action Request or Clarification Request 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



2.1 Review of Documents

The PDD /1/ submitted by Chubu Electric Power Co., Inc. and additional background documents related to the project design and baseline /2/ - /8/ were assessed as a part of the validation.

2.2 Follow-up Interviews

On 14 August 2006, DNV performed interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of Chubu Electric Power Co., Inc., Ningxia Tianjing Wind Power Generation Electricity Joint Stock Co., Ltd. and Ningxia CDM Service Centre were interviewed.

The main topics of the interviews are summarised in Table 1.

Table 1 Interview topics

Interviewed organisation	Interview topics
<ul style="list-style-type: none"> ➤ Chubu Electric Power Co., Inc. ➤ Ningxia Tianjing Wind Power Generation Electricity Joint Stock Co. 	<ul style="list-style-type: none"> ➤ Project background information ➤ Technology used for the project ➤ Project approval status ➤ Local stakeholder consultation process ➤ Construction site confirmation
<ul style="list-style-type: none"> ➤ Ningxia CDM Service Centre 	<ul style="list-style-type: none"> ➤ Applicability of the selected methodologies ➤ Baseline determination ➤ Project additionality ➤ Emission reduction calculation ➤ Monitoring plan

2.3 Resolution of Clarification and Corrective Action Requests

The objective of this phase of the validation was to resolve any outstanding issues which needed to be clarified for DNV's positive conclusion on the project design.

To guarantee the transparency of the validation process, the concerns raised and responses given are summarised in chapter 3 below and documented in more detail in the validation protocol in Appendix A.

Since modifications to the Project design were necessary to resolve DNV's concerns, the project participants decided to revise the PDD and resubmitted the PDD. After reviewing the revised PDD, DNV issued this final validation report and opinion.

2.4 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 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.

3.1 Participation Requirements

The project participant of the non-Annex I Party is Ningxia Tianjing Wind Power Generation Electricity Joint Stock Co., Ltd. of People's Republic of China. The Government of Peoples' Republic of China ratified the Kyoto Protocol on 30 August 2002 and designated the National Development and Reform Commission as its DNA.

The project participant of the Annex I Party is Chubu Electric Power Co., Inc. of Japan. The Government of Japan ratified the Kyoto Protocol on 4 June 2002 and designated the Liaison Committee for Utilisation of the Kyoto Mechanism as the DNA.

The DNA of P. R. China has issued a Letter of Approval /2/ on 29 June 2006, authorising Ningxia Tianjing Wind Power Generation Electricity Joint Stock Co., Ltd. as a project participant.

The DNA of Japan has issued a Letter of Approval /3/ on 31 October 2006, authorising Chubu Electric Power Co., Inc. as a 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 towards China.

3.2 Project Design

The project plans to install a total of 67 wind turbine generators with a unit capacity of 750 KW. The total installed capacity is 50.25 MW.

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

The technology used for the project (S50/750KW model manufactured by Goldwind Science and Technology Co., Ltd., Shanghai) is domestic one and represents current good practice in China.

The project site is divided into the two locations, namely "Hongchazi Wind Farm" and "Shidunzi Wind Farm". They are clearly described in the PDD.

The project activity started on 1 May 2005. An operational lifetime of the project is supposed to be more than twenty (20) years and the project participants chose "renewable crediting period" with the first seven (7) year period starting on 1 April 2007.

3.3 Project Baseline

Being a grid-connected renewable power generation project activity (wind sources), the project correctly applies the approved methodology ACM0002, version 06, "Consolidated methodology

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for grid-connected electricity generation from renewable sources”. The project meets the methodology’s applicability criteria:

- Applies to electricity capacity additions from wind sources
- The project activities don’t involve switching from fossil fuels to renewable energy
- The geographic and system boundaries for the relevant electricity grid can be clearly identified and information on the characteristics of the grid is available

The project boundary is clearly defined as the two sites of project activity. The system boundary is defined in line with ACM0002, i.e. as the North West Regional Grid (NWRG) that consists of the Shaanxi, Gansu, Qinghai Province grids and the Ningxia Autonomous Region grid.

The baseline scenario is that the electricity delivered to the grid by the project would have been generated by the operation of 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 weight is set as OM: 75% and BM: 25%, the default value stipulated by ACM0002 / version 06 for wind power projects.

The NWRG has rich and concentrated coal resources and is dominated by coal-fired power. The average of the five most recent years where generation information is available (2000 – 2004) shows that low-cost/must run resources (mainly hydro power) constitute less than 50 % of total grid generation in the NWRG. The costs for construction of coal fired power plants are comparatively low in China. Although the Renewable Energy Law of the People’s Republic of China took effect on 1 January 2006, its practical implementation is not yet decided. There are no requirements stating that additions to the grid capacity must be made from renewable sources. The coal fired power plants is accordingly likely to remain dominant in the NWRG in the near future.

The baseline determination has been verified and is deemed transparent and reasonable.

3.4 Additionality

The project additionality is demonstrated by applying the “Tool for the demonstration and assessment of additionality (version 02)”.

Step 0: Preliminary screening based on the starting date of the project activity

As the project participants don’t wish to have the crediting period starting prior to the registration of their project activities, “Step 0” is omitted.

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

Three alternate baseline scenarios to the project activity have been identified:

1. Construction of a fossil fuel fired power plant with equivalent generation capacity or annual electricity output,
2. Construction of a commercialized wind turbine generation system with equivalent generation capacity, but not as a CDM project,
3. Provision of equivalent amount of annual power output by the NWPG.



4. Construction of a power plant using other sources of renewable energy with equivalent amount of installed capacity or annual electricity output.

Scenario 1 is excluded because coal-fired power plants smaller than 135 MW are prohibited for construction in areas covered by large grids in China. This justification is deemed reasonable.

Scenario 2 is excluded because of the large investment compared to the low power price.

Scenario 4 is excluded because the renewable power generations other than hydropower generation are of very high generation cost and the hydropower generation is difficult in the project area due to lack of available hydropower resource.

Scenario 3, the equivalent amount of electricity service from the NWPG is therefore selected as the only realistic and credible alternative for the project scenario

Step 2: Investment analysis

A benchmark analysis (Option III) was applied to Step 2. The benchmark is set as 8 % of the total investment and of 10 % equity is reasonable for China wind farm industrial investment decisions. The elements of the IRR analysis, i.e. investment, operating and maintenance costs as well as the revenue from sale of electricity have been verified to be reasonable. The spreadsheet calculating for the benchmark analysis was presented to the DOE. The project IRR is 6.99% without CER and 9.26% with CER (Reflecting an estimated price of CER = USD 7.5 / tCO₂e). It was transparent and verified that the calculations are appropriate and the results are in line with the description on the PDD. /10/

Step 3: Barrier analysis

A barrier analysis has been conducted supplementary to the investment analysis. The main barriers to the project activity include:

1) Investment barrier:

The unit investment per KW of a 50.25 MW wind power generation is 6,889.64 RMB/KW, which is higher than that of a normal coal-fired plant (4,000 RMB / kW) indicated in “The budgetary estimate of fuel-fired power project in the tenth five-year periods issued by State Electricity Supervising Committee”.

The project participants explain that much larger initial investment is needed for wind power generation and can be considered as an investment barrier. The cost advantage of a coal-fired plant is much larger considering the economies of scale. The supported statistics are evidenced and reasonable.

2) Technological barrier:

According to the manufacture (Goldwind Science & Technology) website <http://www.goldwind.cn>, the technology provider is domestic and its 750 KW model is installed in Xinjiang Region in 2003, although not as a CDM project. However, the project will be the first case in Ningxia Province and the technology barrier claimed by the project participant is supposed to be reasonable.

Step 4: Common practice analysis

The common practice analysis shows that the project is the third of its kind in the region. Both the first case (Ningxia Helanshan Wind-farm Project) and the second case (Ningxia Tianjing



Shenzhou 30.6 MW Wind-farm Project) are registered CDM project, thus there is no similar commercial project in Ningxia region and the common practice analysis conducted is reasonable.

Step 5: Impact of CDM registration

The investment analysis shows the potential benefits due to CER income will improve the IRR of the total project scheme and reduce the investment risk. Thus the project is supposed not to be a likely baseline scenario and that emission reductions are hence additional to what would have happened in the project's absence.

3.5 Monitoring Plan

The project applies the approved monitoring methodology ACM0002, Version 06 "Consolidated monitoring methodology for grid-connected electricity generation from renewable sources". The project meets the methodology's applicability criteria as described in this report Sec. 3.3.

The combined margin emission factor is determined *ex-ante* based on the most recent information available. Hence, only electricity generated and sold to the grid will be monitored.

The net electricity generated from the project will be measured and recorded on an hourly basis. This data will be cross verified against the sales receipt from the grid.

There are no specific leakage effects to be considered for this project activity as per ACM0002 / version 06.

Monitoring of sustainable development indicators is not required by the DNA of China. The environmental impacts are considered minor and will be monitored by the local environmental authority during the project lifetime.

The project's operation and management structure are defined in the Monitoring Plan by the project participants featuring as follows:

- Overall project management
- CDM project management and calculation (monitoring, recording and calculation)
- Procedure (monitoring, QA/QC, calibration and maintenance)
- Record keeping, error handling, reporting and corrective actions
- Organisational structure, reporting line and responsibility

Detailed procedures have been elaborated in the CDM Manual and are in place. These will be maintained and implemented to enable subsequent verification.

3.6 Calculation 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 (Ly), 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) 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.

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3) Leakage: no leakage has to be considered for the proposed project activity.

4) Emission reduction: $ER_y = BE_y - PE_y - Ly = BE_y$.

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

The aggregated generation and fuel consumption data are used due as more disaggregated data are not available in the NWPG. Country specific data for net calorific value (NCV_i) of each type of fossil fuel, the IPCC 2006 default values for the oxidation factor of each type of fossil fuel and the total electricity delivered to the NWPG selected are deemed reasonable. Vintage data for the years 2002, 2003 and 2004 are used for operating margin calculation. The OM is calculated to be 1.0518 tCO₂/MWh as a generation-weighted average for the three years.

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 of AM0005 and received the following answers* which are deemed to be applicable for this project.

- 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).

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 2001 to 2004 is chosen and reach 22.82% of total installed capacity.
- The weight of installed capacity additions for thermal power plant is accounted for 71.63% of total installed capacity additions.
- The standard coal consumption of 336.66 g SCE/kWh is used to determine the BM emission factor, which is deemed conservative. The coal consumption efficiency of 336.66 g SCE/kWh is defined as the best technology commercially available in China (<http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File1051.pdf>) by the DNA of China.
- There are no data available of installed capacity additions for oil and gas power in NCPG. However China Energy Statistics Yearbook (data of 2004) shows that the oil and gas used in NWPG are very small, and only for starting up systems of coal fired power plant, accounting for ca. 1.54% of the total CO₂ emissions. It is unlikely that there will be significant additions of oil and gas fired power plant in the NCPG during the first crediting period. So the installed capacity addition for oil and gas power plant being regarded as zero is deemed reasonable. To be conservative, the calculation of BM has been discounted to deduct for the emissions

* to be found on <http://cdm.unfccc.int/Projects/Deviations>

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from the secondary fuels by multiplying a coefficient 98.46% (100% subtracted for the proportion of CO₂ emission from the oil and gas).

- The local value of 29.27 GJ/t standard coal equivalent, 25.8 tC/TJ for carbon content of the coal and the IPCC 2006 default value of carbon oxidisation factor of 100% are used to calculate the BM.
- The BM is calculated as 0.6575 tCO₂/MWh.

The weights ω_{OM} and ω_{BM} are selected as 0.75 and 0.25, respectively, as stipulated for wind project by ACM0002 (version 06). This gives a combined margin of 0.9532 tCO₂/MWh, which is fixed *ex-ante* for the first crediting period.

The last data used to calculate OM is derived from China Energy Statistical Yearbooks 2000-2002, 2004, 2005; to calculate the BM is derived from China Power Electric Power Yearbooks 2002 to 2005.

The GHG calculations are complete and transparent, and their accuracy has been verified.

3.7 Environmental Impacts

An environmental impact assessment (EIA) has been conducted according to Chinese law & regulation. The potential environmental impacts have been sufficiently elaborated in the PDD. No significant negative environmental impacts are expected from the project activity. The Ningxia Environmental Protection Bureau has approved the project activity on 9 September 2005 (site 1) and 4 January 2006 (site 2).

3.8 Comments by Local Stakeholders

The project developer has conducted open public conference in January 2005 as the stakeholder consultation process. The comments received are summarised in the PDD and the minutes of the conference and report on how due account was taken are provided in the PDD.

4 COMMENTS BY PARTIES, STAKEHOLDERS AND NGOS

The PDD of *date* was made publicly available on DNV's climate change website (www.dnv.com/certification/climatechange) and Parties, stakeholders and NGOs were through the CDM website invited to provide comments during a 30 days period from 29 July 2006 to 27 August 2006.

No comment was received during the above period.



5 VALIDATION OPINION

Det Norske Veritas Certification Ltd. (DNV) has performed a validation of the “Ningxia Tianjing 50.25MW wind-farm Project” in China on the basis of UNFCCC criteria for the CDM, 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 country is the People’s Republic of China and the Annex I country is Japan. Both countries fulfil the participation criteria and have approved the project and authorised the project participants. The DNA from the People’s Republic of China confirmed that the project assists in achieving sustainable development.

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

The project correctly applies ACM0002, version 06 “Consolidated methodology for grid-connected electricity generation from renewable sources” and “Tool for the demonstration and assessment of additionality (version 02)”. The determination of the baseline is well elaborated, transparent and sufficiently supported with facts. The selected baseline scenario, i.e. the continuation of the current situation, where there will be no installation of wind power generation is reasonable for the 7 year renewable crediting period. Moreover, an analysis of the investment analysis and the technical barriers of the project and common practice of the regional power generation demonstrated that project is not a likely baseline scenario.

The project will mitigate GHG emissions by partially displacing the NWPG power by the wind power generation. The project thus results in the reduction of GHG emissions those are real, measurable and give long-term benefits and that are additional to what would have occurred in the absence of the projects.

The monitoring plan makes sufficient provision for monitoring relevant project and baseline emission indicators. Detailed responsibilities and authorities for project management, monitoring and reporting and QA/QC procedures have also been envisaged.

The total emission reductions from the project are estimated to be on the average 92 355 t CO₂e per year over the selected 7 year crediting period. The emission reduction forecast has been checked and 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 “Ningxia Tianjing 50.25MW wind-farm Project” in China as described in the PDD of 23 January 2007, meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria and correctly applies the consolidated baseline and monitoring methodology ACM0002, version 06. DNV thus requests the registration of the project as a CDM project activity.



REFERENCES

Documents provided by the project proponent that relate directly to the project:

- /1/ CDM PDD, version TJWi-02, 20 January 2006
CDM PDD, version TJWi-06, 23 January 2007
- /2/ Host country approval letter: issued by DNA of P.R. China on 29 June 2006
- /3/ Annex 1 country approval letter: issued by DNA of Japan, on 31 October 2006
- /4/ Ningxia feasibility study report and approval letterer by Ningxia Development & Reform Commission (site 1), June 2005
- /5/ Environmental impact assessment and approval letter by Ningxia Environmental Protection bureau (site 1), 9 September 2005
- /6/ Ningxia feasibility study report and approval letterer by Ningxia Development & Reform Commission (site 2), October 2005
- /7/ Environmental impact assessment and approval letter by Ningxia Environmental Protection bureau (site 2), 4 January 2006
- /8/ Power Purchase Agreement (PPA) between the project owner and the grid company, 31 August 2004
- /9/ CDM Manual
- /10/ IRR calculation spreadsheet

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

- /11/ International Emission Trading Association (IETA) & the World Bank's Prototype Carbon Fund (PCF): *Validation and Verification Manual*. <http://www.vvmanual.info>
- /12/ ACM0002, version 06: Approved methodology, "Consolidated approved baseline and monitoring methodologies for grid connected electricity generation from renewable sources"
- /13/ CDM EB, "Tool for the demonstration and assessment of additionality", version 02
- /14/ The State Electric Industry Yearbook, 2003, 2004, 2005
- /15/ China Energy Statistics Yearbook, 2000-2003, 2004, 2005

Persons interviewed during the validation, or persons who contributed with other information that are not included in the documents listed above:

- /16/ Yuji Nobusawa, Assistant manager, Environmental Affairs Department, Chubu Electric Power Co., Inc.
- /17/ Wang Kui, General Manager, Ningxia Tianjing Wind Power Generation Electric Joint Stock Co., Ltd.



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- /18/ Zhao Ying, Senior Engineer, Ningxia CDM Service Centre
- /19/ Zhang Jisheng, Researcher, Ningxia CDM Service Centre

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APPENDIX A

CDM VALIDATION PROTOCOL

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

Requirement	Reference	Conclusion	Cross Reference / Comment
1. The project shall assist Parties included in Annex I in achieving compliance with part of their emission reduction commitment under Art. 3	Kyoto Protocol Art.12.2	OK	Table 2, Section E.4.1 The project will assist Annex 1 country Japan in achieving compliance.
2. The project shall assist non-Annex I Parties in achieving sustainable development and shall have obtained confirmation by the host country thereof	Kyoto Protocol Art. 12.2, CDM Modalities and Procedures §40a	CAR 1 OK	Table 2, Section A.3 The Host country approval is to be evidenced to confirm this. China has approved the project on 29 June 2006.
3. The project shall assist non-Annex I Parties in contributing to the ultimate objective of the UNFCCC	Kyoto Protocol Art.12.2.	CAR 1 OK	Table 2, Section E.4.1
4. 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 1/2 OK	The DNA of the Annex 1 Party and the host Parties have not yet approved the project. China approved the project on 29 June 2006. Japan approved the project on 31 October 2006.
5. The emission reductions shall be real, measurable and give long-term benefits related to the mitigation of climate change	Kyoto Protocol Art. 12.5b	OK	Table 2, Section E.1 to E.4
6. Reduction in GHG emissions shall be additional to any that would occur in 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	Table 2, Section B.2.1
7. 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	Decision 17/CP.7, CDM Modalities and Procedures	OK	There is no funding from any Annex-1 Party.

Requirement	Reference	Conclusion	Cross Reference / Comment
official development assistance and is separate from and is not counted towards the financial obligations of these Parties.	Appendix B, § 2		
8. Parties participating in the CDM shall designate a national authority for the CDM	CDM Modalities and Procedures §29	OK	China has designated the “National Development and Reform Commission of the People’s Republic of China” as the national authority for CDM projects. Japan has designated “the Liaison Committee for the Utilization of the Kyoto Mechanisms” as the national authority for CDM projects.
9. The host Party and the participating Annex I Party shall be a Party to the Kyoto Protocol	CDM Modalities §30/31a	OK	China is a Party to the Kyoto Protocol and has ratified it on 30 August 2002. Japan is a Party to the Kyoto Protocol and has ratified it on 4 June 2002.
10. The participating Annex I Party’s assigned amount shall have been calculated and recorded	CDM Modalities and Procedures §31b	OK	The assigned amounts for Japan are calculated and recorded.
11. The participating Annex I Party shall have in place a national system for estimating GHG emissions and a national registry in accordance with Kyoto Protocol Article 5 and 7	CDM Modalities and Procedures §31b	OK	Japan has in place national systems for estimation of GHG emissions and submits regularly the most recent inventories to the UNFCCC.
12. 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	Table 2, Section G
13. Documentation on the analysis of the environmental impacts	CDM Modalities and	OK	Table 2, Section F

Requirement	Reference	Conclusion	Cross Reference / Comment
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.	Procedures §37c		
14. Baseline and monitoring methodology shall be previously approved by the CDM Executive Board	CDM Modalities and Procedures §37e	OK	Table 2, Section B.1.1 and D.1.1
15. Provisions for monitoring, verification and reporting shall be in accordance with the modalities described in the Marrakech Accords and relevant decisions of the COP/MOP	CDM Modalities and Procedures §37f	OK	Table 2, Section D
16. 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	The PDD has been published on DNV's Climate Change website. Parties, stakeholders and NGOs were through the UNFCCC CDM website invited to provide comments on the validation requirement during a period of 30 days from 29 July to 27 August 2006. No comments were received up to 25 August.
17. 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	Table 2, Section B.2
18. 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	Table 2, Section B.2
19. The project design document shall be in conformance with the UNFCCC CDM-PDD format	CDM Modalities and Procedures Appendix B, EB Decision	OK	The PDD is in line with the template, CDM-PDD version 02, 1 July 2004

Table 2 Requirements Checklist

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
A. General Description of Project Activity <i>The project design is assessed.</i>					
A.1. Project Boundaries <i>Project Boundaries are the limits and borders defining the GHG emission reduction project.</i>					
A.1.1. Are the project's spatial (geographical) boundaries clearly defined?	/1/	DR	The project consists of two wind-farm sites located in Ningxia Autonomous Region and Inner Mongolia Autonomous Region. The physical locations are not clearly identified in the PDD.	CL1	OK
A.1.2. Are the project's system (components and facilities used to mitigate GHGs) boundaries clearly defined?	/1/	DR	The electricity to be generated will be exported to Ningxia Regional Power Grid which is connected to the north-western China Power Grid. The project's system boundary is clearly defined as the NRWG.	-	OK
A.2. 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.2.1. Does the project design engineering reflect current good practices?	/1/	DR	Yes. The project design engineering reflects current good practice in China.	-	OK
A.2.2. Does the project use state of the art technology or would the technology result in a significantly better performance than any commonly used	/1/	DR	The technology employed is provided from the domestic company. The description, "more advanced than the current Chinese	CL2	OK

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

Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
technologies in the host country?			wind turbine technology available domestically" is not appropriate.		
A.2.3. Is the project technology likely to be substituted by other or more efficient technologies within the project period?	/1/	DR	The wind turbine technology with variable pitched blade to be used for the project is getting common globally, however is unlikely to be substituted by other or more efficient technology during the first crediting period.	-	OK
A.2.4. Does the project require extensive initial training and maintenance efforts in order to work as presumed during the project period?	/1/	DR	Yes, the training is needed for the project operation.	-	OK
A.2.5. Does the project make provisions for meeting training and maintenance needs?	/1/	DR	The necessary training is expected to be provided by technology supplier however it is not sufficiently addressed in the PDD.	GL3	OK
A.3. Contribution to Sustainable Development <i>The project's contribution to sustainable development is assessed.</i>					
A.3.1. Is the project in line with relevant legislation and plans in the host country?	/1/ /4/ /6/	DR	Yes. The project activities have been already approved by the Ningxia Development & Reform Commission.	-	OK
A.3.2. Is the project in line with host-country specific CDM requirements?	/1/ /2/	DR	The letter of approval for the project is not yet issued by the DNA of China.	CAR4	OK
A.3.3. Is the project in line with sustainable development policies of the host country?	/1/ /2/	DR	Same as A.3.2.	CAR4	OK
A.3.4. Will the project create other environmental or social benefits than GHG emission reductions?	/1/ /2/	DR	The project is also expected to reduce the air pollutant from the coal fired power plant and to create local employment. They will result in environmental improvement and poverty reduction in the area.	-	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
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. Is the baseline methodology previously approved by the CDM Executive Board?	/1/ /12/ /13/	DR	ACM0002, version 06 is applied.	-	OK
B.1.2. Is the baseline methodology the one deemed most applicable for this project and is the appropriateness justified?	/1/ /12/ /13/	DR	The geographic and system boundaries for the relevant electricity grid (china north-West Regional Grid, NWRG) can be clearly identified and information on the characteristics of the grid is publicly available.	-	OK
B.2. Baseline Determination <i>The choice of baseline will be validated with focus on whether the baseline is a likely scenario, whether the project itself is not a likely baseline scenario, and whether the baseline is complete and transparent.</i>					
B.2.1. Is the application of the methodology and the discussion and determination of the chosen baseline transparent?	/1/ /12/ /13/	DR	The application of the baseline methodology and the determination of the chosen baseline are transparent and conservative.	-	OK
B.2.2. Has the baseline been determined using conservative assumptions where possible?	/1/	DR	Baseline scenario has been defined as the continuation of the existing power plants	-	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
	/12/ /13/		and the addition of new power generation sources to meet electricity demand.		
B.2.3. Has the baseline been established on a project-specific basis?	/1/	DR	The baseline has been established based on the situation of the project site.	-	OK
B.2.4. Does the baseline scenario sufficiently take into account relevant national and/or sectoral policies, macro-economic trends and political aspirations?	/1/	DR	The renewable energy law, sectoral policy and development trends in Ningxia have been taken into account.	-	OK
B.2.5. Is the baseline determination compatible with the available data?	/1/	DR	<p>Yes. The data used to determine the baseline emissions are derived from “The State Electric Industry Yearbook, 2003, 2004, 2005” and “China Energy Statistics Yearbook, 2004”.</p> <p>The simple OM is selected and based on the latest three year available grid data of 2002, 2003 and 2004, 0.975396 tCO₂/MWh is obtained as the OM.</p> <p>The BM is calculated based on the grid data of 2002, 2003 and 2004. 0.595917 tCO₂/MWh is obtained as the BM. However the calculations of the additional capacity are not sufficiently transparent to enable verification.</p> <p>The CM is calculated by weighted average of 75% OM and 25% BM and 0.880526 tCO₂/MWh is obtained as the fixed ex-ante EF during the first renewable crediting period.</p> <p>The local value of <i>NCVi</i> (29.27 GJ/t), <i>EFco_{2i}</i> (25.8 tC/TJ) and IPCC default</p>	CL4	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
			oxidation factor <i>OXID_i</i> (98%) are used for determining the OM and BM. The baseline calculations are to be updated at the time of submitting the final PDD.		
B.2.6. Does the selected baseline represent the most likely scenario among other possible and/or discussed scenarios?	/1/ /10/ /12/ /13/	DR	The project additionality is being demonstrated by using the “Tool for demonstration and assessment of additionality” and choosing a combination of Step 2 (investment analysis) and Step 3 (barrier analysis). The tool is not used correctly in line with the guidance and some values used for explanation are not based on conservative assumptions as follows: <ul style="list-style-type: none"> - As a realistic and credible alternative available to the project participants, the other renewable source, i.e. hydro power, should be discussed (Step 1) - The calculations of “investment analysis” are not transparent (Step 2) - The domestic wind turbine generator with capacity of 750 MW seems to have been available in the project area (Step 3) - The technological barrier claimed is not sufficiently substantiated. 	CL-5	OK
B.2.7. Is it demonstrated/justified that the project activity itself is not a likely baseline scenario?	/1/	DR	Same as B.2.6.	CL-5	OK
B.2.8. Have the major risks to the baseline been identified?	/1/	DR	There are no specific risks to the baseline.	-	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
B.2.9. Is all literature and sources clearly referenced?	/1/	DR	Yes.	-	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 reasonable?	/1/	DR	The starting of the project activity indicated in the PDD is 1 May 2005 and the operational lifetime defined is 21 years.	-	OK
C.1.2. Is the assumed crediting time clearly defined (renewable crediting period of seven years with two possible renewals or fixed crediting period of 10 years with no renewal)?	/1/	DR	A renewable crediting period of has been chosen with the length of the first crediting period being 7 years. The starting date of the first crediting period defined is 1 December 2006. This needs be changed.	CL-6	OK
D. Monitoring Plan <i>The monitoring plan review aims to establish whether all relevant project aspects deemed necessary to monitor and report reliable emission reductions are properly addressed ((Blue text contains requirements to be assessed for optional review of monitoring methodology prior to submission and approval by CDM EB).</i>					
D.1. Monitoring Methodology <i>It is assessed whether the project applies an appropriate baseline methodology.</i>					
D.1.1. Is the monitoring methodology previously approved by the CDM Executive Board?	/1/ /12/	DR	The project applies the approved monitoring methodology, ACM0002 / version 06, "Consolidated monitoring methodology for grid-connected electricity generation from renewable sources".	-	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
D.1.2. Is the monitoring methodology applicable for this project and is the appropriateness justified?	/1/ /12/	DR	Yes. ACM0002 is applicable as the project activity does not involve switching from fossil fuels to renewable energy at the site of the project activity and the geographic and system boundaries for the relevant electricity grid can be clearly defined and the grid information is available.	-	OK
D.1.3. Does the monitoring methodology reflect good monitoring and reporting practices?	/1/ /12/	DR	Yes. The electricity generated will be monitored directly. This reflects good practice.	-	OK
D.1.4. Is the discussion and selection of the monitoring methodology transparent?	/1/ /12/	DR	Yes.	-	OK
D.2. Monitoring of Project Emissions <i>It is established whether the monitoring plan provides for reliable and complete project emission data over time.</i>					
D.2.1. 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/ /12/	DR	There are no emissions from the project activity.	-	OK
D.3. Monitoring of Leakage <i>It is assessed whether the monitoring plan provides for reliable and complete leakage data over time.</i>					
D.3.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	/1/ /12/	DR	Leakage does not need to be considered.	-	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
D.4. Monitoring of Baseline Emissions <i>It is established whether the monitoring plan provides for reliable and complete project emission data over time.</i>					
D.4.1. Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining baseline emissions during the crediting period?	/1/ /12/	DR	The project uses the ex-ante determination approach to calculate the OM and the BM. Only electricity generated and sold to the grid will be monitored.	-	OK
D.4.2. Is the choice of baseline indicators, in particular for baseline emissions, reasonable?	/1/ /12/	DR	The choice of baseline indicators is in line with ACM0002 / version06.	-	OK
D.4.3. Will it be possible to monitor / measure the specified baseline indicators?	/1/ /12/	DR	Electricity supplied to the grid by the project, EGY is not listed in the Table. D.2.1.3.	CAR 3	OK
D.4.4. Will the indicators give opportunity for real measurements of baseline emissions?	/1/ /12/	DR	Same as D.4.3.	CAR 3	OK
D.5. Monitoring of Sustainable Development Indicators/ Environmental Impacts <i>It is checked that choices of indicators are reasonable and complete to monitor sustainable performance over time.</i>					
D.5.1. Does the monitoring plan provide the collection and archiving of relevant data concerning environmental, social and economic impacts?	/1/	DR	According to the EIA report and its approval letter from the Ningxia Environmental Protection Bureau, significant environmental impact is not envisaged and environmental monitoring is not required. Also, there is no foreseeable negative social/economic impact.	-	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
D.6. Project Management Planning <i>It is checked that project implementation is properly prepared for and that critical arrangements are addressed.</i>					
D.6.1. Is the authority and responsibility of project management clearly described?	/1/ /9/	DR	The formal authority and responsibility of project management has not been clearly described.	CAR 4	OK
D.6.2. Is the authority and responsibility for registration, monitoring, measurement and reporting clearly described?	/1/ /9/	DR	-Same as D.6.1.-	CAR 4	OK
D.6.3. Are procedures identified for training of monitoring personnel?	/1/ /9/	DR	Procedures have not been envisaged.	CAR 4	OK
D.6.4. Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	/1/ /9/	DR	-Same as D.6.3.-	CAR 4	OK
D.6.5. Are procedures identified for calibration of monitoring equipment?	/1/ /9/	DR	The monitoring of electricity to be supplied to the grid will be cross checked between the project participant and Ningxia Electricity Company, a grid operator. The PPA stipulates the calibration of the monitoring equipment.	-	OK
D.6.6. Are procedures identified for maintenance of monitoring equipment and installations?	/1/ /9/	DR	-Same as D.6.5.-	-	OK
D.6.7. Are procedures identified for monitoring, measurements and reporting?	/1/ /9/	DR	-Same as D.6.3.-	CAR 4	OK
D.6.8. 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/ /9/	DR	-Same as D.6.3.-	CAR 4	OK
D.6.9. Are procedures identified for dealing with	/1/	DR	-Same as D.6.3.-	CAR 4	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
possible monitoring data adjustments and uncertainties?	/9/				
D.6.10. Are procedures identified for review of reported results/data?	/1/ /9/	DR	-Same as D.6.3.-	CAR 4	OK
D.6.11. Are procedures identified for internal audits of GHG project compliance with operational requirements where applicable?	/1/ /9/	DR	-Same as D.6.3.-	CAR 4	OK
D.6.12. Are procedures identified for project performance reviews before data is submitted for verification, internally or externally?	/1/ /9/	DR	-Same as D.6.3.-	CAR 4	OK
D.6.13. Are procedures identified for corrective actions in order to provide for more accurate future monitoring and reporting?	/1/ /9/	DR	-Same as D.6.3.-	CAR 4	OK
E. Calculation of GHG Emissions by Source <i>It is assessed whether all material GHG emission sources are addressed and how sensitivities and data uncertainties have been addressed to arrive at conservative estimates of projected emission reductions.</i>					
E.1. Project GHG Emissions <i>The validation of ex-ante estimated project GHG emissions focuses on transparency and completeness of calculations.</i>					
E.1.1. Are all aspects related to direct and indirect GHG emissions captured in the project design?	/1/	DR	As this is the renewable energy project, the project emissions are regarded as zero.	-	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
E.2. Leakage <i>It is assessed whether there leakage effects, i.e. change of emissions which occurs outside the project boundary and which are measurable and attributable to the project, have been properly assessed and estimated ex-ante.</i>					
E.2.1. Are potential leakage effects beyond the chosen project boundaries properly identified?	/1/	DR	There are no leakages to be considered according to ACM0002.	-	OK
E.3. Baseline Emissions <i>The validation of ex-ante estimated baseline GHG emissions focuses on transparency and completeness of calculations.</i>					
E.3.1. Have the most relevant and likely operational characteristics and baseline indicators been chosen as reference for baseline emissions?	/1/	DR	All the power plants connected to the NWRG are included for calculating OM and BM.	-	OK
E.3.2. Are the baseline boundaries clearly defined and do they sufficiently cover sources and sinks for baseline emissions?	/1/	DR	The NWRG is clearly defined as a baseline boundary. Electricity import/export between the NWRG and the adjacent power grid are not clearly explained.	CL7	OK
E.3.3. Are the GHG calculations documented in a complete and transparent manner?	/1/	DR	Yes. Refer B.2.5.	-	OK
E.3.4. Have conservative assumptions been used when calculating baseline emissions?	/1/	DR	Yes. The local value of 29.27 GJ/t, standard coal and the IPCC default value of 25.8 tC/TJ and carbon oxidation factor of 98% are used to determine the carbon emission factor. Refer B.2.5.	-	OK
E.3.5. Are uncertainties in the GHG emission estimates properly addressed in the	/1/	DR	The fuel consumption of oil and gas in the NWRG is not addressed.	CL8	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
documentation?					
E.3.6. Have the project baseline(s) and the project emissions been determined using the same appropriate methodology and conservative assumptions?	/1/	DR	Yes.	-	OK
E.4. Emission Reductions <i>Validation of ex-ante estimated emission reductions.</i>					
E.4.1. Will the project result in fewer GHG emissions than the baseline scenario?	/1/	DR	Yes. However the reduced amount of emission reductions for 2007 is not clearly explained.	CL-9	OK
F. 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>					
F.1.1. Has an analysis of the environmental impacts of the project activity been sufficiently described?	/1/		Yes. The following environmental impacts are assessed: <ul style="list-style-type: none"> ● Air pollution ● Noise (operation) ● Noise (construction) ● Telecommunication and television interference ● Soil ● Sewage and wastewater No significant environmental impact is expected.	-	OK
F.1.2. Are there any Host Party requirements for an Environmental Impact Assessment (EIA), and if yes, is an EIA approved?	/1/	DR	Yes. The project has been approved by the Ningxia Environmental Protection Bureau on 9 September 2005 (site 1) and 4 January 2006 (site 2).	-	OK

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Checklist Question	Ref.	MoV*	Comments	Draft Concl	Final Concl
F.1.3. Will the project create any adverse environmental effects?	/1/	DR	There are no adverse environmental effects from the project.	-	OK
F.1.4. Are transboundary environmental impacts considered in the analysis?	/1/	DR	There are no transboundary environmental effects from the project.	-	OK
F.1.5. Have identified environmental impacts been addressed in the project design?	/1/	DR	Yes.	-	OK
F.1.6. Does the project comply with environmental legislation in the host country?	/1/	DR	Yes.	-	OK
G. Stakeholder Comments					
<i>The validator should ensure that a stakeholder comments have been invited and that due account has been taken of any comments received.</i>					
G.1.1. Have relevant stakeholders been consulted?	/1/	DR	Yes.	-	OK
G.1.2. Have appropriate media been used to invite comments by local stakeholders?	/1/	DR	The public conference was held in January 2005 in Yinchuan City inviting local stakeholders in order to explain the project to them.		
G.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 the Chinese EIA regulations.	-	OK
G.1.4. Is a summary of the stakeholder comments received provided?	/1/	DR	Yes. A summary of the stakeholder comments received is described in the PDD.	-	OK
G.1.5. Has due account been taken of any stakeholder comments received?	/1/	DR	There was a comment from the local stakeholder during the local stakeholder meeting which pointed out the technical risk however no response from the project participants is described in the PDD.	CL 40	OK

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Table 3 Resolution of Corrective Action and Clarification Requests

Draft report corrective action requests and requests for clarifications	Ref. to Table 2	Summary of project participants' response	Final conclusion
CAR 1: The letter of approval for the project is not yet issued by the DNA of China.	A.3.2-3.3	The letter of approval will be submitted.	OK The letter of approval was issued by the DNA of China on 29 June 2006.
CAR 2: The letter of approval for the project is not yet issued by the DNA of Japan.	Table 1, Req.4	The letter of approval will be submitted.	OK The letter of approval was issued by the DNA of Japan on 31 October 2006.
CAR 3: Electricity supplied to the grid by the project, EGy is not listed in the Table. D.2.1.3.	D.4.3-4.4	The PDD will be corrected reflecting the DNV comment.	OK Section D.2.1.3 was properly corrected.
CAR 4: The formal authority and responsibility of project management has not been clearly described.	D.6.1-6.4, D.6.7-6.13	The additional description will be made in the monitoring plan.	OK The framework of the authority and responsibility of project management are described in the PDD, D.3 and Annex 4.
CL 1: The project consists of two wind-farm sites located in Ningxia Autonomous Region and Inner Mongolia Autonomous Region. The physical locations are not clearly identified in the PDD.	A.1.1	The two wind farms will be described defining the locations.	OK The "Hongchazi Wind Farm" and "Shidunzi Wind Farm" are clearly defined in the PDD A.4.1.4.
CL 2: The technology employed is provided from the domestic company. The description, "more advanced than the current Chinese wind turbine technology available domestically" is not appropriate.	A.2.2	The description is not correct and will be eliminated.	OK
CL 3: The necessary training is expected to be	A.2.5	The training can be provided from the external hired technicians. The PDD will	OK It is described in the PDD, B.3.

Draft report corrective action requests and requests for clarifications	Ref. to Table 2	Summary of project participants' response	Final conclusion
provided by technology supplier however it is not sufficiently addressed in the PDD.		be revised.	
<p>CL 4:</p> <p>The BM is calculated based on the grid data of 2002, 2003 and 2004.</p> <p>0.595917 tCO₂/MWh is obtained as the BM. However the calculations of the additional capacity are not sufficiently transparent to enable verification.</p>	B.2.5	Both the OM and the BM will be recalculated based on the latest available data.	<p>OK</p> <p>The updated PDD described the OM and the BM based on the latest data published by China DNA. The spreadsheet and the PDD are verified to be appropriate and consistent.</p>
<p>CL 5:</p> <p>The tool for demonstration and assessment of additionality is not used correctly in line with the guidance and some values used for explanation are not based on conservative assumptions as follows:</p> <ul style="list-style-type: none"> - As a realistic and credible alternative available to the project participants, the other renewable source, i.e. hydro power, should be discussed (Step 1) - The calculation of "investment analysis" is not transparent (Step 2) - The domestic wind turbine generator with capacity of 750 MW seems to have been available in the project area (Step 3) - The technological barrier claimed is not sufficiently substantiated. 	B.2.6	The PDD will be revised reflecting the DNV comments.	<p>OK</p> <ul style="list-style-type: none"> - Step 1 discusses the four alternate scenarios, new fuel-fired power plant, supply from the existing generation capacity, new hydropower plant and new wind power - The investment analysis is supported by the spreadsheet calculating IRR. It is verified to be appropriate (Step 2) - The imported wind turbine technology is prevailed in the project area only for CDM projects however the domestic one is the first case, thus the explanation is reasonable (Step 3) - Same as the above
<p>CL 6:</p> <p>The starting date of the crediting period described in the PDD is not realistic and</p>	C.1.2.	This is to be amended.	<p>OK</p> <p>The revised starting date of the first crediting period of 1 April 2007 is</p>

Draft report corrective action requests and requests for clarifications	Ref. to Table 2	Summary of project participants' response	Final conclusion
needs be changed.			realistic.
CL 7: Electricity import/export between the NWRG and the adjacent power grid are not clearly explained.	E.3.2	The electricity import/export in the area are insignificant. The further explanation will be added.	OK The amounts of electricity imported/exported to the adjacent grids are very few. Thus the explanation about adjustment is reasonable.
CL 8: The fuel consumption of oil and gas in the NWRG is not addressed.	E.3.5	The oil and gas consumption for power generation are insignificant in the area. The further explanation will be added.	OK There is very few oil or gas consumption by power generation connected to Northwest China Power Grid. The adjustment is reasonable.
CL 9: The estimated amount of emission reductions for 2007 is not clearly explained.	E.4.1	The spreadsheet calculating the annual CER generation will be provided.	OK The value described in the PDD is consistent with the spreadsheet presented.
CL 10: There was a comment from the local stakeholder during the stakeholder meeting which pointed out the technical risk however no response from the project participants is described in the PDD.	G.1.5	The PDD will be revised reflecting the DNV comment.	OK This is addressed in the PDD, G.3.

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APPENDIX B

CERTIFICATES OF COMPETENCE



CERTIFICATE OF COMPETENCE

Akira Sekine

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

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

Høvik, 6 November 2006

Einar Telnes
Director, International Climate Change Services

Michael Lehmann
Technical Director



CERTIFICATE OF COMPETENCE

Wilson Tang

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):	Sectoral scope 13		
Technical Reviewer for (group of) methodologies:			
<i>ACM0001, AM0002, AM0003, AM0010, AM0011, AM0012, AMS-III.G</i>	Yes		
<i>ACM002, AMS-I.A-D, AM0019, AM0026, AM0029</i>	Yes		

Høvik, 6 November 2006

Einar Telnes
Director, International Climate Change Services

Michael Lehmann
Technical Director



CERTIFICATE OF COMPETENCE

Michael Lehmann

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

GHG Auditor:	Yes		
CDM Validator:	Yes	JI Validator:	Yes
CDM Verifier:	Yes	JI Verifier:	Yes
Industry Sector Expert for Sectoral Scope(s):	Sectoral scope 1,2,3 & 9		
Technical Reviewer for (group of) methodologies:			
<i>ACM0001, AM0002, AM0003, AM0010, AM0011, AM0012, AMS-III.G</i>	Yes	<i>AM0021</i>	Yes
<i>ACM002, AMS-I.A-D, AM0019, AM0026, AM0029</i>	Yes	<i>AM0023</i>	Yes
<i>ACM003, ACM0005, AM0033, AM0040</i>	Yes	<i>AM0024</i>	Yes
<i>ACM0004</i>	Yes	<i>AM0027</i>	Yes
<i>ACM0006, AM0007, AM0015, AM0036, AM0042</i>	Yes	<i>AM0028, AM0034</i>	Yes
<i>ACM0007</i>	Yes	<i>AM0030</i>	Yes
<i>ACM0008</i>	Yes	<i>AM0031</i>	Yes
<i>ACM0009, AM0008, AMS-III.B</i>	Yes	<i>AM0032</i>	Yes
<i>AM0006, AM0016, AMS-III.D</i>	Yes	<i>AM0035</i>	Yes
<i>AM0009, AM0037</i>	Yes	<i>AM0038</i>	Yes
<i>AM0013, AM0022, AM0025, AM00379, AMS-III.H, AMS-III.I</i>	Yes	<i>AM0041</i>	Yes
<i>AM0014</i>	Yes	<i>AM0034</i>	Yes
<i>AM0017</i>	Yes	<i>AMS-II.A-F</i>	Yes
<i>AM0018</i>	Yes	<i>AMS-III.A</i>	Yes
<i>AM0020</i>	Yes	<i>AMS-III.E, AMS-III.F</i>	Yes

Høvik, 6 November 2006

Einar Telnes
Director, International Climate Change Services

Michael Lehmann
Technical Director



CERTIFICATE OF COMPETENCE

Einar Telnes

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

GHG Auditor:	Yes		
CDM Validator:	Yes	JI Validator:	Yes
CDM Verifier:	Yes	JI Verifier:	Yes
Industry Sector Expert for Sectoral Scope(s):	Sectoral scope 1,2,3,6 & 10		
Technical Reviewer for (group of) methodologies:			
<i>ACM0001, AM0002, AM0003, AM0010, AM0011, AM0012, AMS-III.G</i>	Yes	<i>AM0021</i>	Yes
<i>ACM002, AMS-I.A-D, AM0019, AM0026, AM0029</i>	Yes	<i>AM0023</i>	Yes
<i>ACM003, ACM0005, AM0033, AM0040</i>	Yes	<i>AM0024</i>	Yes
<i>ACM0004</i>	Yes	<i>AM0027</i>	Yes
<i>ACM0006, AM0007, AM0015, AM0036, AM0042</i>	Yes	<i>AM0028, AM0034</i>	Yes
<i>ACM0007</i>	Yes	<i>AM0030</i>	Yes
<i>ACM0008</i>	Yes	<i>AM0031</i>	Yes
<i>ACM0009, AM0008, AMS-III.B</i>	Yes	<i>AM0032</i>	Yes
<i>AM0006, AM0016, AMS-III.D</i>	Yes	<i>AM0035</i>	Yes
<i>AM0009, AM0037</i>	Yes	<i>AM0038</i>	Yes
<i>AM0013, AM0022, AM0025, AM00379, AMS-III.H, AMS-III.I</i>	Yes	<i>AM0041</i>	Yes
<i>AM0014</i>	Yes	<i>AM0034</i>	Yes
<i>AM0017</i>	Yes	<i>AMS-II.A-F</i>	Yes
<i>AM0018</i>	Yes	<i>AMS-III.A</i>	Yes
<i>AM0020</i>	Yes	<i>AMS-III.E, AMS-III.F</i>	Yes

Høvik, 6 November 2006

Einar Telnes
Director, International Climate Change Services

Michael Lehmann
Technical Director