



# VALIDATION REPORT for the CDM Project Activity

## CECIC Gansu Yumen Changma No.3 Wind Farm Project

In  
P. R. China

Report No. 01 997 9105061567

Version No. 05, 2011-04-20

TÜV Rheinland Japan Ltd.

**I. Project description:**

<b>Project title:</b>	CECIC Gansu Yumen Changma No.3 Wind Farm Project
<b>Host Country:</b>	P. R. China
<b>Methodology:</b>	ACM0002 Version 12.1.0 <input checked="" type="checkbox"/> Large Scale <input type="checkbox"/> Small Scale
<b>Annual average emission reductions (estimate):</b>	425,689 tCO <sub>2</sub> e/yr

**GHG reducing measure/technology:** Displacing fossil fuel based grid power generation with renewable wind power.

Party	Project Participants	Party considered a project participant
P. R. China	CECIC Wind-power (Gansu) Co., Ltd.	No
Japan	Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.	No

**II. Validation:**

**Contract party:** Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.

**Validation Team:**

Role	Full name	Appointed for Sectoral Scopes	Affiliation
<b>Team Leader</b>	Mr. MA Libo	1.1, 1.2, 4.5	TÜV Rheinland (China) Ltd.
<b>Team Member</b>	Mr. ZHU Jiang	1.1, 1.2, 4.5	TÜV Rheinland (China) Ltd.
<b>Technical Reviewer</b>	Ms. DENG Cuiping	1.2, 5.1, 11.1, 12.1	TÜV Rheinland (China) Ltd.

**Validation Phases:**

- ☐ Desk Review  
☐ Follow up interviews  
☒ Resolution of outstanding issues

**Validation Status:**

- ☐ Corrective Actions / Clarifications Requested  
☒ Full Approval and Submission for Registration  
☐ Rejected

**III. Validation Report:**

Report No.: 01 997 9105061567	Current revision No.: <b>05</b>	Date of current revision: <b>2011-04-20</b>	Date of first issue: <b>2010-11-19</b>
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Final approval:  <input checked="" type="checkbox"/>	Released on:  <b>Date: 2011-04-21</b> <b>By: Dr. Manfred Brinkmann</b>	Designated Operational Entity (DOE): <b>TÜV Rheinland Japan Ltd.</b> Shin Yokohama Daini Center Bldg., 3-19-5, Shin Yokohama Kohoku-ku, Yokohama, JAPAN 222-0033 Tel.: +81 45 470 1850, Fax: +81 45 470-2361 E-mail: cdm@tuv.com
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## Abbreviations

Explain any abbreviations that have been used in the report here.

ACM	Approved Consolidated Methodology
BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CHECC	China Hydropower Engineering Consulting Group Co.
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EB	Executive Board
EIA	Environmental Impact Assessment
ER	Emission Reduction
FSR	Feasibility Study Report
GHG	Greenhouse Gas(es)
GWh	Giga Watt hours
GWP	Global Warming Potential
I	Interview
IETA	International Emission Trade Association
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
kW	Kilo Watt
kWh	Kilo Watt Hours
LoI	Letter of Intent
LoA	Letter of Approval
MP	Monitoring Plan
NCV	Net Calorific Value
NDRC	National Development and Reform Commission of P.R.China
NGO	Non-governmental Organization
NWCPG	Northwest China Power Grid
ODA	Official Development Assistance
OM	Operating Margin
PDD	Project Design Document
t	Tonne
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value-added Tax

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Appendix A: Validation Protocol

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## Executive Summary – Validation Opinion

The validation team of TÜV Rheinland Japan Ltd. (TÜV Rheinland) has performed a validation of the “CECIC Gansu Yumen Changma No.3 Wind Farm Project” in P. R. China on the basis of UNFCCC criteria for Clean Development Mechanism (CDM) projects according to Article 12 of the Kyoto Protocol and subsequent decisions of the CDM Executive Board with regard to CDM modalities and procedures and the application of approved methodologies. The validation report and the validation protocol are summarizing the findings of the validation.

The Validation was executed in the following steps so far:

- Desk review of preliminary PDD (Version 01 of 22<sup>nd</sup> September 2010)
- Public stakeholder comment process (28<sup>th</sup> September 2010 to 27<sup>th</sup> October 2010)
- On-site visit with stakeholder interviews (1<sup>st</sup> November 2010 to 4<sup>th</sup> November 2010)
- Issue of checklist with corrective action requests (CARs) and clarification requests (CLs) and the draft validation report & protocol
- Review the update PDD (Version 10.2 of 20/04/2011)
- Issued final validation report

The host country is China and the Annex I country is the Japan. Both countries fulfill the participation criteria and have approved the project and authorized the project participants.

The host country of the proposed project is China. The Letter of Approval (LoA) of voluntary participation, including confirmation by China's DNA (i.e. National Development and Reform Commission), that the project assists in achieving sustainable development, has been received.

The project activity is a bilateral project and the Letter of Approval (LoA) from the DNA of the Japan (i.e. Liaison Committee for the Utilization of the Kyoto Mechanisms), to authorize the Mitsubishi UFJ Morgan Stanley Securities Co., Ltd. as the project participant, has been received.

The validation team did not reveal any information that indicates that the project can be seen as a diversion of ODA funding towards China.

By utilizing renewable wind power resources, the project results in CO<sub>2</sub> emission reductions those are real, measurable and gives 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 project applies approved consolidated baseline and monitoring methodology ACM0002 “Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources”, Version 12.1.0/7/.

And also the project applies the tools as follows:

- *Tool for the demonstration and assessment of additionality (Version 05.2/EB 39/Annex 10)*
- *Tool to calculate the emission factor for an electricity system (Version 02.1.0/EB 60/Annex 8)*

The total emission reductions from the project are estimated to be on the average 425,689 tCO<sub>2</sub>e 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.

The monitoring methodology has been selected correctly. Adequate monitoring procedures have been addressed according to the monitoring methodology ACM0002/Version 12.1.0/7/.

According to the PDD, local stakeholders' comments were invited through questionnaires starting in June 2008. Global stakeholders' inputs have also been invited via the UNFCCC website during the period of 28<sup>th</sup> September 2010 to 27<sup>th</sup> October 2010, where no comments have been received.

The project proponent has resolved all Corrective Action Requests and Clarification Requests as stated in the Validation Report and the Validation Protocol, which has resulted in a revision of the PDD.

In summary, it is validation team's opinion that the "CECIC Gansu Yumen Changma No.3 Wind Farm Project" in P. R. China, as described in the PDD Version 10.2 of 20 April 2011, meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria and correctly applies the baseline and monitoring methodology ACM0002 (Version 12.1.0). TÜV Rheinland thus requests the registration of the Project as a CDM project activity with the UNFCCC.

## 1 INTRODUCTION

The Mitsubishi UFJ Morgan Stanley Securities Co., Ltd. has commissioned the DOE TÜV Rheinland Japan Ltd. to perform a validation of the CDM Project Activity “CECIC Gansu Yumen Changma No.3 Wind Farm Project” in P. R. 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. The term “UNFCCC criteria” refers to Article 12 of the Kyoto Protocol, the CDM modalities and procedures and the subsequent decisions by the CDM Executive Board.

### 1.1 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).

### 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 relevant criteria (see above) and 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 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.

## 2 METHODOLOGY

The validation consists of the following three phases:

- I a desk review of the project design documents
- II on-site visit and 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.

### 2.1 Desk Review of the Project Design Documentation

The following table outlines the documentation reviewed during the validation:

- /1/ Clean Energy Finance Committee Mitsubishi UFJ Morgan Stanley Securities Co., Ltd., Project Design Document Form for “CECIC Gansu Yumen Changma No.3 Wind Farm Project”, Version 1 of 22 September 2010, Version 08 of 1 April 2011, Version 10 of 11 April 2011, Version 10.1 of 14 April 2011 and Version 10.2 of 20 April 2011.
- /2/ Clean Energy Finance Committee Mitsubishi UFJ Morgan Stanley Securities Co., Ltd., IRR and Emission Reductions Calculation Spreadsheets, 22 September 2010, 1 April 2011 and 11 April 2011.
- /3/ China DNA, Letter of Approval (original English version, Ref. no. 2669), September 2010.
- /4/ Japan DNA, Letter of Approval for CECIC Gansu Yumen Changma No.3 Wind Farm Project, 18 January 2011.
- /5/ Mitsubishi UFJ Morgan Stanley Securities Co., Ltd., Modalities of Communication (MoC) for the Project, 7 December 2010.
- /6/ CDM Executive Board, Clean Development Mechanism Validation and Verification Manual, version 01.2 Annex 1/EB55, 30 July 2010.
- /7/ CDM Executive Board, ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”, Version 12.1.0, Annex 7/ EB58, 26 November 2010. (<http://cdm.unfccc.int/methodologies/DB/C505BVV9P8VSNNV3LTK1BP3OR24Y5L/view.html>)
- /8/ CDM Executive Board, Guidance on the Assessment of Investment Analysis (Version 03.1), 15 January 2010.
- /9/ CDM Executive Board, Guidelines on the Demonstration and Assessment of Prior Consideration of the CDM, Version 02 of 17 July 2009 and Version 03 of 11 September 2009. (According to Guidelines on The Demonstration and Assessment of Prior Consideration of the CDM Version 02 which is valid at the time of project starting date, the notifications to China DNA and UNFCCC secretariat was provide. This is also conformity with the Guidelines on The Demonstration and Assessment of Prior Consideration of the CDM Version 03.)



- /10/ CDM Executive Board, Project Design Document Form (CDM- PDD) Version 03, 28 July 2006.  
([http://cdm.unfccc.int/Reference/PDDs\\_Forms/PDDs/index.html](http://cdm.unfccc.int/Reference/PDDs_Forms/PDDs/index.html))
- /11/ CDM Executive Board, Guidelines for Completing the Project Design Document, and the Proposed New Baseline and Monitoring Methodologies, Version 07 EB41, 2 August 2008.
- /12/ CDM Executive Board, Modalities of Communication Form (F-CDM-MOC) Version 01, Annex 60/EB45, 13 February 2009.  
([http://cdm.unfccc.int/EB/045/eb45\\_repan60.pdf](http://cdm.unfccc.int/EB/045/eb45_repan60.pdf))
- /13/ CDM Executive Board: Tool for the demonstration and assessment of additionality, version 05.2, EB39, 16 May 2008.  
([http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v5.2.pdf/history\\_view](http://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-01-v5.2.pdf/history_view))
- /14/ CDM Executive Board: Tool to calculate the emission factor for an electricity system, version 02.1.0, EB60/Annex 8, 15 April 2011.
- /15/ China Electric Power Yearbook 2005~2009.
- /16/ China Energy Statistical Yearbook 2006~2009.
- /17/ IPCC: Revised 2006 IPCC Guidelines for National Greenhouse Gas Inventories Reference Manual. 2006.
- /18/ State Power Corporation of China. Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects. Beijing: China Electric Power Press, 2003.
- /19/ Chinese Government, Chinese Environment Impact Assessment Law, 28 October, 2002.
- /20/ Ministry of Finance and State Administration of Taxation, Notice on VAT of Resources Comprehensive Utilization and Other Products, 9 December 2008.
- /21/ State Council of the People's Republic of China, Provisional Regulations on Value Added Tax, 10 November 2008.
- /22/ State Council, Decision on the revision of the "Provisional Regulations of Levying Education Surtax", 20 August 2005. ([http://www.law-lib.com/law/law\\_view1.asp?id=99771](http://www.law-lib.com/law/law_view1.asp?id=99771))
- /23/ State Council, Provisional Regulations on Urban Maintenance and Construction Tax, valid since 1985.  
(<http://www.chinatax.gov.cn/n480462/n480513/n480919/index.html>)
- /24/ Chinese Government, Enterprise Income Tax Law, 16 March 2007.
- /25/ State Council: Implementation Rules for Law of the People's Republic of China on Enterprise Income Tax, Promulgated by Decree No. 512 of the State Council of the People's Republic of China, 6 December 2007.  
([http://www.gov.cn/zwggk/2007-12/11/content\\_830645.htm](http://www.gov.cn/zwggk/2007-12/11/content_830645.htm))
- /26/ Chinese DNA, Notice on Publishing 2009 Baseline Emission Factors for Regional Power Grids in China, 2 July 2009.  
([http://qhs.ndrc.gov.cn/qjzjz/t20090703\\_289357.htm](http://qhs.ndrc.gov.cn/qjzjz/t20090703_289357.htm))

- /27/ Chinese DNA, Notice on Publishing 2010 Baseline Emission Factors for Regional Power Grids in China, 20 December 2010.  
(<http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File2552.pdf> )
- /28/ CDM Executive Board, Guideline for The Reporting and Validation of Plant Load Factors, Version 01 (EB 48/Annex 11), 17 July 2009.  
([http://cdm.unfccc.int/Reference/Guidclarif/reg/reg\\_guid04.pdf](http://cdm.unfccc.int/Reference/Guidclarif/reg/reg_guid04.pdf) )
- /29/ Lanzhou University Environment Assessment and Research Institute, Environmental Impact Assessment Report Table of the Project, April 2008.
- /30/ Gansu Province Environment Protection Bureau, EIA Approval, 6 August 2008.
- /31/ Northwest Hydro Consulting Engineers CHECC, Feasibility Study Report of the Project, April 2009.
- /32/ China National Development and Reform Commission, Project Approval for the Project (FaGaiNengYuan[2009]1005), 21<sup>st</sup> April 2009.
- /33/ China National Development and Reform Commission, Approval on Alternating the Project Owner of the Project (FaGaiBanNengYuan[2009]2515, 29<sup>th</sup> November 2009.
- /34/ China National Development and Reform Commission, Approval on Construction Plan of Gansu Windfarm Base including the CECIC Gansu Yumen Changma No.3 Wind Farm Project (FaGaiNengYuan[2008]1135, 16 May 2008.
- /35/ China Construction Bank, Loan Commitment Letter (JiYiCheng[2008]077), 22 August 2008.
- /36/ CECIC Wind-power Investment Co., Ltd., Board Meeting Minutes, 15 April 2009.
- /37/ Beijing Guoxuan Engineering Technical Co., Ltd. as the supervisory company, Construction Starting Permission Letter, 19 September 2009.
- /38/ CECIC Wind-power Investment Co., Ltd., CDM Application Form, 3 August 2009.
- /39/ CECIC Wind-power Investment Co., Ltd., Prior Consideration of the CDM Form, 3 September 2009.
- /40/ CECIC Wind-power Investment Co., Ltd., Project Idea Note, 20 November 2009.
- /41/ CECIC Wind-power (Gansu) Co., Ltd., Term Sheet for Emission Reductions Purchase Agreement ("ERPA"), 12 April 2010.
- /42/ CECIC Wind-power (Gansu) Co., Ltd., CDM Emission Reduction Purchase Agreement, 11 June 2010.
- /43/ CECIC Wind-power Investment Co., Ltd., Purchase Contract of Wind Turbine Generators, 28 April 2009.
- /44/ CECIC Wind-power Investment Co., Ltd., Foundation Construction Engineering Contracts Phase 1 (Contract No. FD-CM2-2009018), September 2009.
- /45/ CECIC Wind-power Investment Co., Ltd., Foundation Construction Engineering Contracts Phase 1 (Contract No. FD-CM2-2009019), September 2009.

- /46/ CECIC Wind-power Investment Co., Ltd., Foundation Construction Engineering Contracts Phase 2 (Contract No. FD-CM2-2009020), October 2009.
- /47/ CECIC Wind-power Investment Co., Ltd., Foundation Construction Engineering Contracts Phase 2 (Contract No. FD-CM2-2009021), October 2009.
- /48/ CECIC Wind-power (Gansu) Co., Ltd., General Contract List, 25<sup>th</sup> September 2010.
- /49/ CECIC Wind-power (Gansu) Co., Ltd., Stakeholder Questionnaire and Records, 18 June 2008.
- /50/ China DNA, Clarifications on Energy Loss Factors of China Wind Power Generation, 2 June 2009.
- /51/ State Electricity Regulatory Commission, 2009 Electricity Price and Accounting Monitoring Report, September 2010.  
([http://www.serc.gov.cn/zwgk/jggg/201009/t20100913\\_13544.htm](http://www.serc.gov.cn/zwgk/jggg/201009/t20100913_13544.htm) )
- /52/ National Development and Reform Commission, Approval on Yumen Changma Concession Windfarm Project (FaGaiNengYuan[2008]1508), 17 June 2008.
- /53/ CDM Executive Board, Guidelines for the Reporting and Validation of Plant Load Factors, EB48 annex 11, 17<sup>th</sup> July 2009.
- /54/ CDM Executive Board, Information Note on The Highest Tariffs Applied By The Executive Board In Its Decisions On Registration of Projects in The People's Republic of China (version 01), EB54, June 2010.
- /55/ CECIC Wind-power (Gansu) Co., Ltd., Staff training records, October 2010.
- /56/ CECIC Wind-power (Gansu) Co., Ltd. One-line diagram of the electricity meters.
- /57/ CECIC Wind-power Investment Co., Ltd., Purchase Contract of Wind Turbine Tower for Phase 1, August 2009.
- /58/ CECIC Wind-power Investment Co., Ltd., Installation Contract of Wind Turbine, December 2010.
- /59/ CECIC Wind-power (Gansu) Co., Ltd., Purchase Contract of Wind Turbine Transformer, May 2010.
- /60/ CECIC Wind-power Investment Co., Ltd., Purchase Contract of Electric-current Collection Line, May 2010.
- /61/ CECIC Wind-power Investment Co., Ltd., Purchase Contract of Main Transformer, 14 July 2009.
- /62/ CECIC Wind-power Investment Co., Ltd., Purchase Contract of Wind Turbine Tower for Phase 2, October 2009.
- /63/ State Economic and Trade Commission, National industry standard of the Technical Administrative Code of Electric Energy Metering (DL/T448-2000), 3 November 2000.
- /64/ Environmental Protection Department, Government of the Hong Kong Special Administrative Region, Supplementary Notes on the Implementation of Projects under the Clean Development Mechanism by Hong Kong Enterprises in Mainland, 1 December 2009.

- /65/ Gold Standard Registry, Gansu Anxi Wind Farm Project is under the assistance of carbon finance (GS-VER). (<https://gs1.apx.com/mymodule/ProjectDoc/EditProjectDoc.asp?id1=554>)
- /66/ UNFCCC secretariat, Clarification and guidance about revisions of the MoC forms and acceptability for due processing by the secretariat, email records on 13 April 2011.

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

1. The project IRR without the CER revenues was changed from 5.24% to 5.53%, because the VAT deduction and drawback was considered for proposed wind power project in accordance with the *Provisional Regulations on Value Added Tax/21/* and *Notice on VAT of Resources Comprehensive Utilization and Other Products/20/*.
2. The OM and BM emission factors of the Northwest China Power Grid (NWCPG) have been updated according to the NDRC's *Notice on Publishing 2010 Baseline Emission Factors for Regional Power Grids in China* dated 20 December 2010. The annual emission reductions were revised from 430,924 tCO<sub>2</sub>e to 425,689 tCO<sub>2</sub>e. Please refer to Section 3.4.4 of this report for details.
3. The applied methodology ACM0002 was updated from Version 12 to Version 12.1.0 and the *Tool to calculate the emission factor for an electricity system* was updated from Version 02 to Version 02.1.0.
4. Changes in accordance with the responses provided to the CARs and CLs in the Table 2 of Appendix A.

## 2.2 Follow-up Interviews with Project Stakeholders

*Identify any personnel who have been interviewed and/or provided additional information to the presented documentation.*

	Date	Name	Organization	Topic
/i/	2 <sup>nd</sup> November 2010	Mr. ZHAO Dongsheng	CECIC Wind-power (Gansu) Co., Ltd.	<ul style="list-style-type: none"> <li>- Project management</li> <li>- Project financing</li> <li>- Wind resources assessment</li> <li>- CDM consideration</li> <li>- Sustainable issues</li> <li>- Project implementation</li> <li>- Additionality issues</li> <li>- Technical issues</li> <li>- Staff Training</li> <li>- Local environmental condition</li> </ul>

/ii/	2 <sup>nd</sup> 2010	November	Ms. CHEN Dongjuan	CECIC Wind- power Investment Co., Ltd.		- CDM consideration - Investment barrier
/iii/	2 <sup>nd</sup> 2010	November	Mr. Takeshi Miyata	Mitsubishi Morgan Stanley Securities Co., Ltd.	UFJ	- Project design - IRR calculation
/iv/			Mr. ZHANG Yun			- Additionality issues - Monitoring plan
/v/	2 <sup>nd</sup> 2010	November	Mr. SHI Yubao	Development and Reform Bureau of Yumen City		- Project approval - Local economy - Wind power development
/vi/	2 <sup>nd</sup> 2010	November	Mr. ZHAO Yuan	Environmental Protection Bureau of Yumen City		- Environmental impacts - Environmental approval
/vii/	2 <sup>nd</sup> 2010	November	Mr. REN Dinghai	Local residents		- Local environment conditions - Job opportunities
/viii/	2 <sup>nd</sup> 2010	November	Ms. MU Rong			- Land compensation

## 2.3 Resolution of Outstanding Issues

The objective of this phase of the validation is to resolve any outstanding issues which need be clarified prior to TÜV Rheinland'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 this 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:

- mistakes have been made with a direct influence on project results;
- 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.

<b>Validation Protocol Table 1: Requirement checklist</b>				
<b>Checklist Question</b>	<b>Reference</b>	<b>Means of verification (MoV)</b>	<b>Comment</b>	<b>Draft and/or Final Conclusion</b>
<i>The various requirements in Table 1 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 <b>corrective action request (CAR)</b> 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>

  

<b>Validation Protocol Table 2: Resolution of Corrective Action and Clarification Requests</b>			
<b>Draft report clarifications and corrective action requests</b>	<b>Ref. to checklist question in table 1</b>	<b>Summary of project owner response</b>	<b>Validation conclusion</b>
<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 1 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 1, under "Final Conclusion".</i>

**Figure 1. Validation protocol tables**

## 2.4 Internal Quality Control

The final validation report underwent technical review before requesting registration of the project activity. The technical review was performed by a technical reviewer qualified in accordance with TÜV Rheinland's qualification scheme for CDM validation and verification.

## 2.5 Validation Team

Role	Full Name	Appointed for Sectoral Scopes	Affiliation
Team Leader	Mr. MA Libo	1.1,1.2,4.5	TÜV Rheinland (China) Ltd.
Team Member	Mr. ZHU Jiang	1.1,1.2,4.5	TÜV Rheinland (China) Ltd.
Technical Reviewer	Ms. DENG Cuiping	1.2, 5.1, 11.1, 12.1	TÜV Rheinland (China) Ltd.



### 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.

The final validation findings relate to the project design as documented and described in the revised and resubmitted project design documentation.

#### 3.1 Approval and Participation

According to the PDD/1/, the project participants for the Project are CECIC Wind-power (Gansu) Co., Ltd. from China and Mitsubishi UFJ Morgan Stanley Securities Co., Ltd. from Japan. Therefore the Project is a bi-lateral project. The Host Party China and the participating Annex I Party the Japan meet the requirements to participate in the CDM.

The Letter of Approval (LoA) from the DNA of China/3/, National Development and Reform Commission, to authorize the CECIC Wind-power (Gansu) Co., Ltd. as the project participant and to confirm that this is a voluntary project assisting China in achieving sustainable development of project, has been received.

The Letter of Approval (LoA) from the DNA of the Japan (i.e. Liaison Committee for the Utilization of the Kyoto Mechanisms)/4/, to authorize the Mitsubishi UFJ Morgan Stanley Securities Co., Ltd. as the project participant, has been received.

Furthermore, the below table summarizes the project participants and parties involved. The authenticity of the Letters of Approval has been validated by the validation team as indicated in the table below.

Project participants	1. CECIC Wind-power (Gansu) Co., Ltd.	2. Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.
Parties involved	P. R. China (host)	Japan
APPROVAL		
LoA received	Yes	Yes
Reference to document	Ref. no: 2669 (original English version)	No indication in English version of LoA
Date of LoA	September 2010 (original English version)	18 January 2011
LoA received from	PP	PP
Validation of	Confirmed through	No doubt was raised

authenticity	accessing in CDM Project Database official website of China DNA on 22 <sup>nd</sup> February 2011. ( <a href="http://cdm.ccchina.gov.cn/website/CDM/pdf/Item_new/Item_new5742.pdf">http://cdm.ccchina.gov.cn/website/CDM/pdf/Item_new/Item_new5742.pdf</a> )	through comparison with LoA of Japan DNA for latest registered CDM Projects available on UNFCCC website. ( <a href="http://cdm.unfccc.int/Projects/DB/JCI1240478126.36/view">http://cdm.unfccc.int/Projects/DB/JCI1240478126.36/view</a> )
Validity of LoA	Valid	Valid
PARTICIPATION		
Party is party to Kyoto Protocol	Yes	Yes
Voluntary participation	Yes	Yes
Diversion of official development aid towards host country	Not Applicable	No
Project contribution to Sustainable Development	Yes	Not Applicable

The Modalities of Communications (MoC) of the Project/5/ has been received by the validation team and it was confirmed that the MoC was signed on 7/12/2010 according to the Modalities of Communication Form (F-CDM-MOC) Version 01/12/, which is considered acceptable for processing by the UNFCCC secretariat/66/. The validation team has contacted each authorized representatives of the project participants as indicated in the MoC by email and it has been confirmed that the contact details and signatory are authorized and credible.

The equity ratio of the Project is 20% and 80% of the total investment cost should apply loans from bank according to the NDRC's *Approval on Alternating the Project Owner*/33/ dated on 29/11/2009. 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 Design Document is based on the currently valid PDD template/10/ and is completed in accordance with the CDM Executive Board, Guidelines for Completing the Project Design Document (CDM-PDD) and the Form for Proposed New Baseline and Monitoring Methodologies (CDM-NM), Version 07/11/.

### 3.3 Project Description

According to the PDD/1/ and Feasibility Study Report (FSR)/31/, the proposed Project involved installation of 134 units of wind turbine generators in the desert zone in Yumen Town, Yumen City, Gansu Province, P. R. China. The geographical coordinates in the PDD have been checked to be consistent with the Windfarm Site Layout by the Northwest Hydro Consulting Engineers CHECC. The installed capacity of each unit is 1,500 kW and the turbine lifetime is 20 years, which have been confirmed in the Wind Turbine Generator Purchasing Contract/43/. The total installation capacity is thus calculated as 201 MW (i.e. 134 Units\*1,500 kW/Unit=201MW). The Project proposes the installation of FD82A-1500/11 wind turbines produced by the Dongfang Steam Turbine Manufacture. Further, the technical specifications have been checked according to the Wind Turbine Generator Purchasing Contract/43/. Each wind turbine is equipped with a turbine-transformer unit boosting voltage to 35 kV. All transformers are linked with the 35 kV suspension lines and are connected to 35/330 kV step-up station and exported to the Northwest China Power Grid (NWCPG).

Being a renewable energy project, the project activity will generate greenhouse gas (GHG) emission reductions by avoiding CO<sub>2</sub> emissions from electricity generation by fossil fuel power plants which are dominated in Northwest China Power Grid. The Project is considered to contribute to the sustainable development of the local community and the host country by utilizing the renewable wind sources for power generation, and avoiding environmental pollutions including SO<sub>2</sub>, NO<sub>x</sub> and particulate matter from business-as-usual fossil fuel power plant. In addition, local government will also benefit from the additional income tax for electricity sale of the project activity according to interview with Mr. SHI Yubao/v/, the head of Yumen City development and reform commission. It is thus concluded that the implementation of the project activity will help in achieving sustainable development in social, environmental and economic aspects for local community.

The expected operational lifetime of the project activity is 20 years, which is consistent with the technical lifetime of the wind turbine generators/43/. A renewable 7-year crediting period has been chosen for the Project, starting from 1 July 2011 or from the date of registration, whichever is later. The emission reductions are estimated to be 425,689 tCO<sub>2</sub>e per year and totally 2,979,823 tCO<sub>2</sub>e over the first 7-year crediting period.

The construction of the Project was commenced on 19 September 2009, which was confirmed by the *Construction Starting Permission Letter*/37/. The major construction contracts/44//45/ were signed in September 2009 and the Wind Turbine Generator Purchasing Contract/43/ was signed between the project owner and Dongfang Steam Turbine Manufacture and CECIC on 28<sup>th</sup> April 2009, which is before the construction contract sign date. Therefore, the wind turbine contract sign date of "28<sup>th</sup> April 2009" is justified as the project starting date representing the earliest date on which the real action begins.

According to onsite interview/i/, all the operating staff has received technical training by the equipment supplier. According to the PDD, the monitoring staff will also will receive training on monitoring requirements and procedures. Therefore, it has been demonstrated to validation team that all the staff involved in the Project was expected

to receive sufficient training after it was put into commercial operation.

**Therefore, the validation team is able to confirm the project descriptions have been completely and accurately provided in the revised PDD/1/ according to the supporting evidence received during validation process.**

<i>Starting date of Project</i>	<i>Justification of and evidences (references) on the starting date of project</i>	<i>Expected project operational lifetime</i>	<i>Crediting period</i>
28/04/2009	Wind Turbine Generator Purchasing Contract/43/	20 years 0 month	Renewable 7 years crediting period starting from 1 July 2011.

### 3.4 Baseline and Monitoring Methodology

#### 3.4.1 Applicability of the selected methodology to the project activity

The project applies the ACM0002/Version 12.1.0, "Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources"/7/, which is latest till 24<sup>th</sup> February 2011. The compliance of the project with the selected methodology is justified as follows:

- 1.) It was confirmed by onsite inspection and reviewing the FSR/31/ that the project is a newly-built windfarm project. The project is a greenfield project and doesn't involve switching from fuels to renewable energy sources as confirmed by local governmental official/v/.
- 2.) The generated electricity will be exported to the Gansu Province Power Grid according to onsite interview with the project owner/i/. According to China DNA's 2010 Baseline Emission Factors for Regional Power Grids in China/27/, Gansu Province Power Grid is part of Northwest China Power Grid (NWCPG). Therefore, the geographic and system boundary for the relevant grid can be clearly identified and information on the characteristics of the grid is available.

By onsite assessment and interview with local governmental official/v//vi/, the validation team confirms that the project activity complies with all applicability conditions of the methodology and relevant tools. No other GHG emissions occurring within the project boundary as a result of the implementation of the project which is expected to contribute more than 1% of the overall expected average annual emissions reductions and not addressed by the applied methodology.

#### 3.4.2 Project Boundary

The project boundary is defined as the site of the project activity and all power plants connected physically to NWCPG, which covers Shaanxi Province, Gansu Province, Qinghai Province, Ningxia Hui Autonomous Region and Xinjiang Uygur Autonomous Region. This is consistent with the latest delineation of grid boundaries as provided

by the DNA of China/27/.

The NWCPG is dominated by thermal power plants as per the China Electrical Power Yearbook 2005~2009/15/. It is deemed likely that thermal 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 NWCPG during the project operation period.

The Project was still under construction and the wind turbine generators have been inspected during onsite assessment. Fossil fuels have been used for land excavation, foundation treatment and transportation of construction materials etc. However, these emissions, arising from power plant construction, fuel handling, need not be considered as leakage according to ACM0002 Version 12.1.0/7/. No fossil fuels consumption will be required for normal operation of the wind power plant according to the project owner/i/.

Therefore, the identified boundary and the selected sinks and sources of greenhouse gases have been justified for the project activity in the PDD/1/ according to the applied methodology.

	<i>GHGs involved</i>	<i>Description</i>
<i>Baseline emissions</i>	<i>CO<sub>2</sub></i>	Main emission sources as the baseline is NWCPG.
<i>Project emissions</i>	<i>Zero</i>	No fossil fuel consumptions have been identified for operation of the wind power plant during site assessment. The internal electricity consumptions will be imported from the Grid, where the internal consumptions will be deducted from the generating output.
<i>Leakage</i>	<i>Zero</i>	Emissions, arising due to activities such as power plant construction, fuel handling (extraction, processing, and transport), are not required to be considered as leakage according to ACM0002 Version 12.1.0/7/.

### 3.4.3 Baseline Identification

Since the proposed project is a grid-connection wind power project, the baseline is Electricity delivered to the grid by the project activity would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources, as reflected in the combined margin (CM) calculations described in the “*Tool to calculate the emission factor for an electricity system*”/14/.

No other baseline scenarios were evaluated as this is not required for the proposed wind power project in line with ACM0002 Version 12.1.0/7/.

The ex-ante estimation method was selected for the OM and BM emission factor based on the information obtained from *China Electric Power Yearbook 2007~2009/15/* and *China Energy Statistical Yearbook 2007~2009/16/*, which are the most recent information available at the time of PDD submission for validation in September 2010.

<p><i>The approved baseline methodology applicable to the project</i></p> <p><i>explicit criteria</i></p> <p><i>implicit criteria (e.g. available scenarios, applicability of formulas for BE/PE/LE calculations)</i></p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>As per ACM0002 Version 12.1.0/7/, please see details in Section 3.4.1 of this report.</p>
<p><i>PDD includes all assumptions and data used by project participants</i></p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>The PDD include all assumptions and data according to ACM0002 Version 12.1.0 and “Tool to calculate the emission factor for an electricity system” (version 02.1.0)/14/.</p>
<p><i>All the references and documents used are relevant for establishing the baseline scenario</i></p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p><i>China Electric Power Yearbook 2005~2009/15/</i> <i>China Energy Statistical Yearbook 2007~2009/16/</i> and <i>China DNA's Notice on Publishing 2010 Baseline Emission Factors for Regional Power Grids in China/27/</i> are relevant for establishing the baseline scenario according to ACM0002 Version 12.1.0/7/.</p>
<p><i>All the references and documents used are correctly quoted and conservatively interpreted in the PDD</i></p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>All the references and documents are confirmed to be correctly quoted and conservatively interpreted in the Section A.2, Section B.4 and Section B.6 of the PDD.</p>
<p><i>All relevant policies / regulations considered are listed in the PDD</i></p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<p>All relevant policies/regulations considered are confirmed to be listed in the PDD and <i>China DNA's Notice on Publishing 2010 Baseline Emission Factors for Regional Power Grids/27/</i>.</p>



<i>Identified potential baseline scenarios reasonably represent what would/could occur in the absence of the proposed project activity</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	No other baseline scenarios need to be considered according to ACM0002 Version 12.1.0/7/.
<i>The baseline scenario selection is appropriate and determined according to the methodology</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	As per ACM0002 Version 12.1.0, please see details in Section 3.4.3 of this report.
<i>The approved methodology used is applicable to the identified baseline scenario</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	As per ACM0002 Version 12.1.0, please see details in Section 3.4.1 of this report.

### 3.4.4 GHG emission reductions

The Project is new wind power project in desert area. The installed capacity in the FSR/31/ has been checked to be consistent by the validation team with the technical agreement of the wind turbine purchase contracts/43/ during site assessment. The project emission is zero under ACM0002 Version 12.1.0 ( $PE_y=0$ ).

The Project is a new wind power project, with no equipment transferred from another activity or to another activity according to onsite assessment. The main generating equipment including wind turbine generators are newly purchased, where purchasing contracts for those equipments/43/ have been reviewed. The major construction facilities and installations have been inspected to be newly-built during site assessment. Therefore, no leakage needs to be considered for the project activity according to the methodology. ( $L_y=0$ ).

The baseline emission factor for the project, using the combined margin (CM) approach, is fixed *ex-ante* during the first 7-year crediting period according. The default weights for the proposed project of 75% OM and 25% BM have been selected for wind power project according to *Tool to calculate the emission factor for an electricity system (version 02.1.0)/14/*. For the calculation of OM emission factor, simple OM emission factor calculation method is chosen 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 average emission factor for the grid for each fuel type is calculated *ex-ante* based on a 3-year full generation-weighted average of the data available from 2006~2008/15//16/, which are confirmed to be the most recent information at the time of PDD submission for validation. Because plant specific fuel consumption and electricity generation data is not publicly available in China, a deviation of the baseline methodology of AM0005 (later replaced by ACM0002) approved by the EB (as detailed in the PDD) is adopted for using emission data published by the DNA of P. R. China in December 2010/27/.

The NDRC published grid emission data on 20/12/2010/27/ is applicable for this project although it was issued after the time of validation on 28/09/2010 due to following reasons:

- 1) The “China Electric Power Yearbook 2009”/15/ and “China Energy Statistical Yearbook 2009” /16/ were published in December 2009 and July 2010 respectively, which represents the latest information available at the time of validation.
- 2) The OM data in 2010 is 0.9947 tCO<sub>2</sub>/MWh, which is more conservative than the 1.0246 tCO<sub>2</sub>/MWh in 2009.
- 3) The power supply efficiency of coal-fired, oil-fired and gas-fired using for BM calculation in 2010, which should be issued by NDRC, was not available at the time of validation. However, the data in 2009 can be referred. Compared with the BM data in 2010 (i.e. 0.6878 tCO<sub>2</sub>/MWh), the BM data in 2009 (i.e. 0.6433 tCO<sub>2</sub>/MWh) is more conservative.
- 4) Considering the weighting of the OM and BM for wind power projects (i.e. 0.75 and 0.25 respectively) as per *Tool to calculate the emission factor for an electricity system (version 02.1.0)/14/*, the combined margin (CM) in 2010 is calculated as 0.9180 tCO<sub>2</sub>/MWh, which is more conservative than the CM in 2009 (i.e. 0.9293 tCO<sub>2</sub>/MWh).

Therefore, it is deemed conservative to apply the NDRC’s published grid emission data on 20/12/2010/27/. Considering the CM emission factor of NWCPG is 0.9180 tCO<sub>2</sub>/MWh and total on-grid output is 463,714 MWh, the emission reductions, which equals to the baseline emissions, are thus calculated as 425,689 tCO<sub>2</sub>e annually.

<i>All assumptions made for estimating GHG are listed in the PDD</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All the assumptions made for estimating GHG have been confirmed to be listed in the PDD Section B.6. The main assumptions are in line with <i>Notice on Publishing 2010 Baseline Emission Factors for Regional Power Grids in China/27/</i> .
<i>All data used by project participants are listed in the PDD</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All data used by the project participants have been confirmed to be listed according to the <i>Tool to calculate the emission factor for an electricity system (version 02.1.0)/14/</i> and relevant China DNA’s Guidance.
<i>Their references and sources are also listed in the PDD</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The references and sources have been confirmed to be listed in the PDD Section B.6 and Annex 3 Baseline Information.
<i>Formulas, parameters, values are complete, accurate, transparent and conservative</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Formulas, parameters, values have been confirmed to be completely, accurately, transparently and conservatively documented in the PDD Section B.6 and Annex 3 Baseline Information according to the <i>Tool to</i>



		<i>calculate the emission factor for an electricity system (version 02.1.0) and relevant China DNA's Guidance.</i>
<i>All the references and documents used are correctly quoted and conservatively interpreted in the PDD</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All the references and documents used have been correctly quoted and conservatively interpreted in the PDD Section B.6 and Annex 3 Baseline Information according to the <i>Tool to calculate the emission factor for an electricity system (version 02.1.0)</i> and relevant China DNA's Guidance.
<i>Methodology has been applied correctly to calculate project emissions, baseline emissions, leakage emissions and emission reductions</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The methodology (i.e. ACM0002 Version 12.1.0) has been correctly applied to calculate project emissions, baseline emissions leakage emissions and emission reductions. Please also see validation details in Section 3.4.4 of this report.
<i>All the emissions of baseline emissions can be replicated using information provided in the PDD</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All the emissions of baseline emissions can be replicated by multiplying the annual on-grid output (i.e. 463,714 MWh) by the CM emission factor of NWCPG (i.e. 0.9180 tCO <sub>2</sub> e/MWh). The baseline emissions calculation is thus calculated as 425,689 tCO <sub>2</sub> e per year.

### 3.5 Additionality

The additionality of the Project is demonstrated by applying the *Tool for the demonstration and assessment of additionality (Version 05.2)/13/*, which is required by the ACM0002 Version 12.1.0/7/ .

#### 3.5.1 CDM Consideration and CDM Status Securing

Regarding the CDM consideration, a timeline of CDM consideration was demonstrated in the revised PDD. Following the *Guidance on the Demonstration and Assessment of Prior CDM Consideration/8/*, the validation team has checked the "implementaion timeline" with the evidence received during validation and the findings are chronologically summarized below.

#### Project Implementation Timeline

Date (dd/mm/yy)	Description	Reference of Evidence
04/2008	The Environmental Impact Assessment Report Table was completed.	/29/

06/08/2008	The EIA was approved.	/30/
04/2009	The FSR was completed including CDM revenue consideration due to the lack of financial attractiveness	/31/
21/04/2009	The Project was approved by NDRC	/32/
<b>28/04/2009</b>	<b>The Wind Turbine Equipment Purchase contract was signed.</b>	<b>/43/</b>
14/07/2009	The main transformer contract was signed.	/61/
03/08/2009	The wind turbine tower purchase contract for Phase 1 was signed.	/57/
09/2009	The Foundation Construction Engineering Contracts for Phase 1 were signed.	/44//45/
19/09/2009	The construction activities were started.	/37/
10/2009	The Foundation Construction Engineering Contracts for Phase 2 were signed.	/46//47/
10/2009	The wind turbine tower purchase contract for Phase 2 was signed.	/62/
12/2009	The wind turbine installation contract was signed.	/58/
24/05/2010	The wind turbine transformer contract was signed.	/59/
24/05/2010	The 35 kV electric collecting line was signed	/60/

According to the timeline listed above, the starting date of the project activity shall be justified as the wind turbine purchase contracting date of “28/04/2009” representing the earliest date on which the real actions of the project activity begins.

#### CDM Consideration Timeline

Date (dd/mm/yy)	Description	Reference of Evidence
18/06/2008	The stakeholder consultation meeting was arranged.	/49/
<b>15/04/2009</b>	<b>The Board decided to develop the proposed project as CDM project and proceed with investment.</b>	<b>/36/</b>
03/08/2009	The notification of the commencement of the project activity and the intention to seek CDM status was sent to NDRC.	/38/
03/09/2009	The notification of the commencement of the project activity and the intention to seek CDM status was sent to Executive Board.	/39/
20/11/2009	The Project Idea Note was completed by the project owner.	/40/
12/04/2010	The CDM Emission Reduction Purchase Agreement was signed.	/41/
22/09/2010	The PDD version 01 was put on UNFCCC for global stakeholder consultation.	UNFCCC website

According to the timeline listed above, the CDM revenue was considered to improve the financial attractiveness in the approved FSR and the project owner made decision of CDM development on 15<sup>th</sup> April 2009 as confirmed Management Meeting Minutes/35/. In addition, the project participant/i/ has informed China DNA on 03/08/2009, which is within the 6 months of the project starting date (i.e. 28/04/2009) in line with the *Guidelines on The Demonstration and Assessment of Prior Consideration of The CDM Version 03/9/*. The project participant has informed UNFCCC secretariat on 3 September 2009 in line with the *Guidelines on The Demonstration and Assessment of Prior Consideration of The CDM Version 03* ([http://cdm.unfccc.int/Projects/PriorCDM/notifications/index\\_html](http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html)). After period of negotiation, the project owner signed the CDM Emission Reduction Purchase Agreement with the buyer on 12<sup>th</sup> April 2010.

**Therefore, the validation team is able to confirm that CDM revenue of the project activity was essential for the decision to proceed with the investment in the Project before the project starting date (i.e. 28<sup>th</sup> April 2009).**

<i>Starting date of project</i>	<i>Justification of and evidences (references) on the starting date of project</i>	<i>Date of CDM consideration</i>
28/04/2009	Wind Turbine Purchase Contract/43/	Notification to NDRC and UNFCCC secretariat on 03/08/2009 and 03/09/2009 respectively.

### 3.5.2 Alternatives

No other alternatives need to be identified since the applied methodology ACM0002 Version 12.1.0/7/ prescribes the baseline scenario, which is in accordance with VVM version 01.2 paragraph 105.

### 3.5.3 Investment analysis

According to the PDD/1/, the additionality of the project is demonstrated by applying investment analysis according to the *Tool for the Demonstration and Assessment of Additionality/13/* (Version 05.2/EB 39/Annex10). By reviewing the *Tool for the demonstration and assessment of additionality* version 05.2, the validation team confirms that the Option III (i.e. benchmark analysis) was appropriately adopted in the PDD based on following justifications:

- 1). Option I is not applicable since the proposed project generates financial and economic benefits through the sales of electricity other than CDM related income.
- 2). Option II is not applicable since the baseline scenario of the proposed project is the NWCPG rather than a similar investment project.

Further, the benchmark analysis is selected since the baseline is supply of electricity from a grid (i.e. NWCPG), which is in line with the paragraph 16 of the Guidelines on Assessment of Investment analysis version 03.1/8/.

The IRR calculation results indicate that the project IRR (after tax) without CDM revenue is 5.53% (after tax) which is lower than the Benchmark IRR (8%). Therefore, the Project is unlikely to be financial attractive without expected CDM revenue. The validation processes are conducted in the following steps.

### 3.5.3.1 Assessing the Suitability of the Selected Benchmark

Investment analysis was adopted to demonstrate that the Project is not financial attractive without CDM revenues. The benchmark analysis was applied in the PDD, and the benchmark IRR was determined as 8% (after tax) according to *Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects/18/* issued by former State Power Corporation of China in 2003, which is deemed an appropriate benchmark reference for the retrofit power projects and new power projects investment in China. The “*Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects*” was published by state grid company on 10<sup>th</sup> September 2002 and no revision of this document has been found since 2002. Furthermore, the validation team has cross-checked with other newly-registered CDM windfarm projects in China and the “*Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects*” has also been used as benchmark source for investment analysis (<http://cdm.unfccc.int/Projects/registered.html>).

The quoted benchmark source was confirmed to be consistent with the FSR/31/ of the proposed project. The economic analysis has also been compared against the same benchmark of 8% (after tax) according to “*Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects*”. The FSR was approved by National Development & Reform Commission, which again indicates that the benchmark of 8% (after tax) is considered appropriate by local government authorities.

### 3.5.3.2 Assessing Project IRR Calculation

The project IRR was selected as reference to demonstrate the financial viability in the PDD because the selected benchmark is prescribed as project IRR. The cost of financing expenditures (i.e. loan repayments and interest) has been excluded in the calculation of project IRR, which is confirmed to be in line with the requirement of paragraph 9 of the *Guidance on Assessment of Investment Analysis/8/*.

The IRR spread sheet has been provided in a transparent manner in accordance with paragraph 8 of the *Guidance on Assessment of Investment analysis/8/*. By conducting the calculation and reproducing the results, the validation team confirms that the IRR calculation adopts fixed assumptions throughout the assessment period, which is in line with *Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects*.

### 3.5.3.3 Assessing the Compliance with Requirements of EB38 Paragraph 54

As stated in paragraph 54 of EB 38 report (**reflected in article 113 of VVM**)

*“The CDM Executive Board clarified that in cases where project participants rely on values from Feasibility Study Reports (FSR) that are approved by national authorities for proposed project activities, DOEs are required to ensure that:*

*(a) The FSR has been the basis of the decision to proceed with the investment in the project, i.e. that the period of time between the finalization of the FSR and the investment decision is sufficiently short for the DOE to confirm that it is unlikely in the context of the underlying project activity that the input values would have materially changed.*

*(b) The values used in the PDD and associated annexes are fully consistent with the FSR, and where inconsistencies occur the DOE should validate the appropriateness of the values.*

*(c) On the basis of its specific local and sectoral expertise, confirmation is provided, by cross-checking or other appropriate manner, that the input values from the FSR are valid and applicable at the time of the investment decision.”*

The validation team has verified that the IRR calculation is conducted according to the Project FSR. As demonstrated in the project implementation timeline, the FSR of the Project was completed by Northwest Hydro Consulting Engineer, CHECC in April 2009 and the project starting date is justified as 28 April 2009. Since the time gap between the Project FSR accomplishment and project starting date is sufficiently short. Therefore, the validation team confirms that it is unlikely in the context of the underlying project activity that the input values would have materially changed at the time of investment decision in accordance with VVM version 01.2 paragraph 113(a)/6/.

The validation team has cross-checked the main input values used in the PDD/1/ and IRR worksheet against the data of the FSR and found that the values used in the PDD and associated annexes are fully consistent with the FSR, which is in line with VVM version 01.2 paragraph 113(b)/6/.

Through cross-check the input values in the PDD/1/ and FSR/31/, benchmark reference/18/, major equipment purchase contracts/43//57//58//59//60//61//62/, major construction contracts/44//45//46//47/, tax policy, tariff notifications from NDRC and other relevant documents, the validation team confirms that the input values from the FSR are valid and applicable at the time of the investment decision, which is in line with VVM version 01.2 paragraph 113 (c). The validation processes are substantiated in the context below.

#### **1). Period of Assessment**

The project IRR was selected as reference to demonstrate the financial viability in the PDD. Assessment Period applied in IRR spread sheet is selected as 23 Years including 3-year construction period and 20-year operational lifetime. The operational lifetime (i.e. 20 years) was confirmed to be consistent with the technical lifetime of the wind turbine generators (i.e. 20 years) according to the wind turbine contracts. The validation team confirms that the assessment period has been selected in line with

the paragraph 3 of the *Guidance on Assessment of Investment analysis version 03.1*.

## **2). Evaluation of Fair Values**

The residue value rate was selected as 5% of the fixed asset value in the IRR spreadsheets, which is confirmed reasonable compared with other registered windfarm projects in Gansu Province (i.e. with range of 3%~5% for residue value rate). The fair value has also been included as cash inflow at the final year. Therefore, the validation team confirms the fair value has been appropriately calculated in line with the paragraph 4 of the *Guidelines on Assessment of Investment analysis version 3.1/8/*.

## **3). Depreciation**

The depreciation period is selected as 20 years and the annual depreciation rate is calculated as 4.75% (i.e.  $(1-5\%)/20=4.75\%$ ). The selected depreciation period (i.e. 20 years) is confirmed reasonable for wind power generating facilities since the *Implementation Rules for Law of the People's Republic of China on Enterprise Income Tax/25/* stipulates a minimum 10-year depreciation period for manufacturing equipment. The depreciation cost has been deducted in estimating gross profits and has not been included as expenses (i.e. cash outflow) to avoid double counting. Only taxation (i.e. electricity sale tax and income tax) has been considered as expenses since the selected benchmark is intended for post-tax comparison. Therefore, the validation team confirms the depreciation has been appropriately calculated in line with paragraph 5 of the *Guidelines on Assessment of Investment analysis version 3.1*.

## **4). Taxes**

Since the project starting date was 28/4/2009, the applicable VAT was selected as 17%, which was confirmed in line with the *Provisional Regulations on Value Added Tax/21/* issued by Ministry of Finance and State Administration of Taxation on 10 November 2008. The input VAT from equipment purchase (i.e. 187.103 million RMB) has been deducted from the output VAT in line with the *Provisional Regulations on Value Added Tax/21/*. The 50% VAT drawback has been considered as cash inflow in the IRR spreadsheets for the proposed wind power project in line with the *Notice on VAT of Resources Comprehensive Utilization and Other Products* issued on 9<sup>th</sup> December 2008. The education surcharge tax is selected as of 3% of the VAT in line with the Decision on the revision of the *Provisional Regulations of Levying Education Surtax/22/* issued by the Stated Council. The urban maintenance and construction surcharge tax is selected as 7% of the VAT in line with the *Provisional Regulations on Urban Maintenance and Construction Tax/23/*. According to the *Enterprise Income Tax Law* issued by Chinese Government on 16<sup>th</sup> March 2007 (Effective since 1<sup>st</sup> January 2008), the income tax rate was selected as 25% and confirmed to be appropriate at the time of investment decision.

Furthermore, the equity ratio is selected as 20% and 80% of the total investment is arranged through bank loan, which is calculated in line with the approved FSR/31/. The interest rates were selected as 5.94% for long-term loan and 5.31% for short-term loan according to the FSR which was completed by qualified third-party entity.



The validation team confirms the selected interest rates were appropriately determined at the time of investment decision (i.e. 15 April 2009) according the prevailing commercial interest rates regulated by The People's Bank of China during the period of 23 December 2008 to 20 October 2010(<http://www.pbc.gov.cn/publish/zhengcehuobisi/631/2011/20110210093635541134488/20110210093635541134488.html>). Therefore, the validation team confirms the actual interest payable has been taken into account in the calculation of income tax in the IRR spreadsheet, which is in line with paragraph 11 of the *Guidance on Assessment of Investment analysis*.

### 5). Fixed Asset Investment

As demonstrated in the FSR, the fixed asset investment was calculated in accordance with local policy and price level of Gansu Province at the fourth quarter of year 2008. The assumptions and parameters were adopted from *Method and Standard of Investment Evaluation for Windfarm Engineering, Feasibility Study Report* and *Budget Estimation for Windfarm Engineering* and other relevant standards which were effective at the time of FSR design. The total statistic investment for the Project was assessed to be appropriate as 1,980.023 Million RMB which was in line with the FSR and PDD. Considering the total installed capacity is 201MW, the unit investment cost was calculated as 9,851 RMB/kW, which is about 5.85% higher than the average specific investment costs. The validation team has accessed on the website of the National Bureau of Statistics of China (i.e. <http://www.stats.gov.cn/tjsj/ndsj/>) and confirmed the price indices for fixed asset investment were keep increasing during year 2007 and 2008. Further, even if assuming the average specific investment of the similar registered CDM projects (i.e., 9,306 RMB/kWh) by decreasing the investment cost by 5.53% in the IRR spreadsheets, the project IRR would be slightly increasing to 6.38% but still below the benchmark.

#### Specific Investment Cost of Other Similar Windfarm Projects within Gansu Province

Ref.	Project Title	Starting Date in PDD	Installed Capacity (MW)	Fixed Asset investment (RMB)	Specific investment (RMB/kW)
1081	Gansu Datang Yumen 49 MW Wind Power Project	01/12/2006	49.3	455,699,000	9,243
2109	CGN Gansu Anxi Daliang 49.5MW Wind Power Project	05/03/2007	49.5	463,610,000	9,366
2193	Gansu Yumen Sanshilijingzi Wind Power Project	19/04/2007	49.3	435,250,000	8,829
2680	Gansu Yumen Diwopu Wind Power Project	22/09/2008	49.5	452,120,000	9,134
2766	Gansu Jingtai 45MW Wind Power Project	24/08/2007	45	397,987,900	8,844
2883	Gansu Baiyin Pingchuan Jiancaitang 45MW Wind Farm Concession Project	17/10/2007	45	425,030,000	9,445

2916	Gansu Guazhou Daliangxi Wind Power Project	30/04/2008	49.5	474,331,000	9,582
3167	Gansu Yumen Diwopu Phase II Wind Power Project	20/12/2008	49.5	426,710,000	8,620
3241	Huadian Gansu Guazhou Ganhekou No. 7 Wind Farm Project	06/01/2009	201	1,954,110,000	9,722
3253	Gansu Guazhou Xiangyang Phase II Wind Power Project	27/02/2009	49.5	451,550,000	9,122
3512	Gansu Datang Changma Wind Power Project	22/05/2009	201	1,923,720,000	9,571
3919	Gansu Tianrun Liuyuan 1st Stage 49.5MW Wind Park Project	05/03/2009	49.5	477,804,800	9,653
	<b>The proposed project</b>	<b>28/04/2009</b>	<b>201</b>	<b>1,980,023,000</b>	<b>9,851</b>

For the cross-check purpose, the actual investment cost of main equipment and major construction, as evidenced in the relevant contracts signed with the equipment suppliers and engineering construction companies, has been listed and compared with the corresponding FSR estimated values. The comparison has demonstrated that there is small gap (i.e. 0.59% of the fixed asset investment) between the FSR estimated costs and the actual equipment costs, while these equipment costs have aggregated to be around 88% of the fixed asset investment. Since the Project was still under construction during onsite assessment, additional construction cost will be invested in parallel with its implementation. Therefore, the validation team confirms that the total investment is appropriately estimated in IRR calculation.

#### **Estimated and Actual Investment Cost Comparison (Unit: Million RMB)**

Item	FSR Estimated (F)	Actual Cost (A)	Reference
Wind Turbine Generators	1,275.479	1262.079	/43/
Wind Turbine Tower	230.9369	248.222	/57/
Wind Turbine Installation	46.0681	42.2	/58/
Turbine Transformer	44.22	51.6732	/59/
Electric-current Collecting Line	72.21	78.50	/60/
Turbine Foundation Construction	76.6913	74.672	/44//45//46//47/
<b>Total</b>	<b>1,745.61</b>	<b>1,757.35</b>	-
<b>Percent of Fixed asset Investment</b>	<b>88.16%</b>	<b>88.75%</b>	-
<b>Differences</b>	<b>88.75%-88.16%=0.59%</b>		-

#### **6). Electricity Output**

According to the FSR, the wind power resources are assessed by *GB/T 18710-2002 Wind Resources Assessment Method for Windfarms* on the basis of 30 years (i.e. from the year 1978 to 2007) regional wind resources statistics and 2-year onsite wind



measurement at the proposed project site starting from January 2005 to December 2006. The allocation and technical performance of each wind turbine generator within the windfarm has been optimized and analyzed in the FSR. The theoretical electricity output was estimated as 630,903 MWh excluding the wake impact with installation of 134 units of 1500kW wind turbine generators. Considering the factors including the wake impact, the wind turbine availability, rotor blade soiling loss, transmission loss & auxiliary consumption, and control & turbulence influence etc., the annual on-grid output is estimated as 463,714 MWh after eliminating a 26.5% energy loss factor.

The validation team has reviewed the electricity output calculation in the FSR which elaborates the energy loss factors have been determined according to the technical specifications and local environment conditions. The validation team has also cross-checked with the *Clarifications on Energy Loss Factors of China Wind Power Generation/50/* issued by China DNA on 2<sup>nd</sup> June 2009 (<http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/File2278.pdf>). The clarifications from China DNA are compiled by Water Resources and Hydropower Planning and Design General Institute, Ministry of Water Resources, which has abundant experiences on windfarm planning, wind power engineering design and evaluation. Therefore, the Clarifications from China DNA are deemed to be local experts' opinion from authoritative third-party entity for wind power engineering in China.

Item	Values	Justification by Validation Team
Air Density Correction	0	The air density is selected as 1.059 kg/m <sup>3</sup> during power curve calculation. The "1.059 kg/m <sup>3</sup> " is the actual air density around the project site. Therefore, there is no need to consider the air density correction.
Turbine Availability	5%	The turbine availability is selected according to the wind turbine manufacturer's proficiency and the actual condition of the windfarm site. The turbine availability is confirmed reasonable through cross-check with the clarifications by China DNA.
Power Curve Adjustment	8%	The power curve adjustment is selected according to the wind turbine manufacturer's common specifications and is also confirmed reasonable through cross-check with the clarifications by China DNA.
Turbulence & Control Impact	4%	The turbulence & control impact is estimated as 4% by considering the turbulence intensity ranges from 0.05 to 0.07, and is reasonable by cross-check with clarifications from China DNA.
Rotor Blade Soiling Loss	1%	The project site is located at sandy area. The rotor blade surface roughness will increase along with wind turbine operation. The rotor blade

		soiling loss is selected as 1%, which is confirmed reasonable through cross-check with the clarifications by China DNA.
Climate Impact	2.5%	The wind turbines will be shut down in case of low temperature, and the climate impact is estimated according to the local windfarm operation experiences. The climate impact is also confirmed reasonable through cross-check with the clarifications by China DNA.
Transmission Loss & Internal Consumption	5%	It has been confirmed that the transmission loss & internal consumption is accounted considering the transformer loss from the main transformer and turbine transformers, and transmission losses, which are confirmed reasonable through cross-check with the clarifications by China DNA.
Other Uncertain Impact	1%	This is selected as 1% considering the calculation errors of the WASP Software, which is appropriate through cross-check with the clarifications by China DNA.

The plant load factor of the Project is ex-ante determined as 26.34% in the PDD according to the FSR compiled by Northwest Hydro Consulting Engineers CHECC, which is third-party entity contracted by the project participant and in line with clause 3(b) in *Guidelines for the Reporting and Validation of Plant Load Factors*. The FSR of the Project was approved by National Province Development & Reform Commission on 21 April 2009, which is in line with clause 3(a) in *Guidelines for the Reporting and Validation of Plant Load Factors/53/*.

#### **Plant Load Factors of Similar CDM Windfarm Projects within Gansu Province**

Ref.	Project Title	Installed Capacity (MW)	Annual Output (MWh)	PLF
1081	Gansu Datang Yumen 49 MW Wind Power Project	49.3	103,530	23.97%
2109	CGN Gansu Anxi Daliang 49.5MW Wind Power Project	49.5	117,368	27.07%
2193	Gansu Yumen Sanshilijingzi Wind Power Project	49.3	107,872	24.98%
2680	Gansu Yumen Diwopu Wind Power Project	49.5	106,613	24.59%
2766	Gansu Jingtai 45MW Wind Power Project	45	84,206	21.36%
2883	Gansu Baiyin Pingchuan Jiancaitang 45MW Wind Farm Concession Project	45	99,320	25.20%
2916	Gansu Guazhou Daliangxi Wind	49.5	115,144	26.55%

	Power Project			
3167	Gansu Yumen Diwopu Phase II Wind Power Project	49.5	113,800	26.24%
3241	Huadian Gansu Guazhou Ganhekou No. 7 Wind Farm Project	201	457,742	26.00%
3253	Gansu Guazhou Xiangyang Phase II Wind Power Project	49.5	111,280	25.66%
3512	Gansu Datang Changma Wind Power Project	201	457,911	26.01%
3919	Gansu Tianrun Liuyuan 1st Stage 49.5MW Wind Park Project	49.5	117,036	26.99%
	<b>The proposed project</b>	<b>201</b>	<b>463,714</b>	<b>26.34%</b>

From the table above, the plant load factor of the Project is about 3.78% higher than the average load factor of the listed projects (i.e., 25.38%) but well within the range of 21.36%~27.07% of other similar CDM projects in the same region.

Based on the analysis above, the validation team is therefore able to confirm that the annual electricity output has been appropriately estimated.

### 7). Annual O&M Cost

According to the IRR worksheet, the annual O&M cost mainly involves staff salary & welfare, material cost, maintenance cost and insurance cost, which is in line with the FSR. The maintenance cost of the Project was estimated within the range of 1.0%~1.6% of the fixed asset investment during the 20-year operation period, which is deemed reasonable as the tear and wear generally increases with increasing electricity production and well within the range of 1.5%~2% for new wind turbine recommended by Danish Wind Industry Association (<http://guidedtour.windpower.org/en/tour/econ/oandm.htm>). Furthermore, the O&M cost per MWh of the Project is confirmed comparable with other similar windfarm projects in the same region as indicated in the table below. The specific O&M cost of the Project is only 9.64% lower than the average level of the listed projects (i.e. 102.67 RMB/MWh) but this is deemed conservative and still well within the range of 84.13~122.78 RMB/MWh.

#### O&M Cost of Similar CDM Windfarm Projects within Gansu Province

Ref.	Project Title	Annual Output (MWh)	O&M Cost (RMB)	O&M Cost/ MWh (RMB/MWh)
1081	Gansu Datang Yumen 49 MW Wind Power Project	103,530	12,580,000	121.51
2109	CGN Gansu Anxi Daliang 49.5MW Wind Power Project	117,368	11,708,600	99.76
2193	Gansu Yumen Sanshiliqingzi Wind Power Project	107,872	9,075,000	84.13
2680	Gansu Yumen Diwopu Wind Power Project	106,613	9,341,550	87.62
2766	Gansu Jingtai 45MW Wind Power Project	84,206	8,925,000	105.99

2883	Gansu Baiyin Pingchuan Jiancaitang 45MW Wind Farm Concession Project	99,320	10,970,000	110.45
2916	Gansu Guazhou Daliangxi Wind Power Project	115,144	10,470,000	90.93
3167	Gansu Yumen Diwopu Phase II Wind Power Project	113,800	13,570,000	119.24
3241	Huadian Gansu Guazhou Ganhekou No. 7 Wind Farm Project	457,742	43,741,400	95.56
3253	Gansu Guazhou Xiangyang Phase II Wind Power Project	111,280	10,640,000	95.61
3512	Gansu Datang Changma Wind Power Project	457,911	45,056,000	98.39
3919	Gansu Tianrun Liuyuan 1st Stage 49.5MW Wind Park Project	117,036	14,370,000	122.78
	<b>The proposed project</b>	<b>463,714</b>	<b>43,019,000</b>	<b>92.77</b>

Therefore, the validation team confirms that the annual O&M cost has been appropriately estimated.

### 8). Electricity Tariff

In accordance with VVM (version 01.2) paragraph 110 and the latest *Guidelines on the Assessment of Investment Analysis* 03.1/8/, the applied electricity tariff shall be valid and applicable at the time of the investment decision taken by the project participant. According to the PDD and FSR, two-phase tariff (i.e. 0.5206 RMB/kWh incl. VAT for the first 30,000 operational hours and local average beyond) was applied and this is confirmed by the following documents:

- FaGaiNengYuan[2008]1135/34/ was issued on 16 May 2008 which was prior to the investment decision by the project owner on 15<sup>th</sup> April 2009. It was mentioned that the proposed project should be constructed as a concession windfarm project and the tariff should be executed as concession tariff.
- FaGaiNengYuan[2008]1508/52/ was issued on 17 June 2008. It was mentioned that the NDRC approved the concession tariff as 0.5206 RMB/kWh incl. VAT for the first 30,000 operational hours and local average beyond for Yumen Changma Concession Windfarm Project.
- FaGaiNengYuan[2009]1005/32/ was issued on 21 April 2009. It was mentioned that the NDRC approved the tariff of the Project as 0.5206 RMB/kWh incl. VAT for the first 30,000 operational hours and local average beyond.

Therefore, the validation team confirms that the two-phase tariff is applicable to the proposed project.

The tariff before 30,000 hours was determined as 0.5206 RMB/kWh incl. VAT in line with the NDRC's tariff notification FaGaiNengYuan[2008]1135/34/ and FaGaiNengYuan[2008]1508/52/. Both tariff notifications were available at the time of investment decision on 15/04/2009. So validation team considered this tariff is reasonable and applicable for this project.

The tariff after the 30,000 hours is determined as 0.42 RMB/kWh incl. VAT in line with approved FSR/31/. The validation team has reviewed the *2009 Electricity Price and Accounting Monitoring Report/51/* by State Electricity Regulatory Commission and confirmed that the local average tariff of Gansu Province in 2009 is 0.25118 RMB/kWh incl. VAT. It is thus deemed conservative that the project owner applied the 0.42 RMB/kWh incl. VAT as the average tariff beyond considering the local average tariff at the time of investment decision (i.e. 15 April 2009). Further, if the tariff at the first 30,000 hours (i.e. 0.5206 RMB/kWh incl. VAT) is applied for the whole operational period, the project IRR would be 6.07% after tax, which is still below the benchmark.

According to *Information Note on The Highest Tariffs Applied By The Executive Board In Its Decisions On Registration of Projects in The People's Republic of China/54/* issued in EB54 Para 53, the highest applicable wind tariff in Gansu Province applied by Executive Board is 0.585 RMB/kWh incl. VAT. As reflected in the IRR spreadsheets, the validation team has confirmed that when the highest applicable tariff in the IRR worksheet for the first 30,000 hours, the project IRR would be 6.71% after tax, which is below the benchmark. **Even if the 0.585 RMB/kWh is applied for the entire operational period, the project IRR would be 7.48% (after tax), which is still below the benchmark IRR 8%. Therefore, it is validation team's opinion that the suitability of electricity tariff has been sufficiently demonstrated in line with EB54 Para. 53.**

#### 3.5.3.4 Sensitivity Analysis

According to the PDD and IRR spread sheet, the sensitivity analysis, with four financial parameters (i.e. fixed asset investment, annual O&M cost, electricity tariff and power generation) selected, has been conducted through assessment of variation range (i.e. +/-10%) and it has demonstrated to validation team that the project IRR would not reach benchmark with +/-10% variation of the selected financial parameters.

The calculation has been reviewed by the validation team during validation and confirmed that the sensitivity analysis has been carried out in accordance with the FSR. The results also show that the project IRR would reach 8% when:

- The fixed asset investment decreases by 16.90%; or
- The electricity tariff increases by 22.3%; or
- The power generation increases by 25.0%;

It was also demonstrated in the PDD that even if the annual O&M cost decrease by 100%; the project IRR is still below the benchmark. The details on validation of these critical conditions are summarized in the table below.

Critical Condition	Justifications by Validation Team
Fixed asset investment decreases by 16.90%	As discussed above, the actual investment cost of main equipment and major construction has been compared with the corresponding FSR estimated values. The comparison has demonstrated that there is small gap

	(i.e. 0.59% of the fixed asset investment) between the FSR estimated costs and the actual equipment costs, while these equipment costs have aggregated to be around 88% of the fixed asset investment. Therefore, it is unrealistic for the total static investment to reduce significantly.
Annual O&M cost decrease by 100%	It has been checked that the annual O&M cost mainly involves staff salary & welfare, material cost, maintenance cost and insurance cost. The maintenance cost of the Project was calculated as within the range of 1.0%~1.6% of the fixed asset investment during the operation period, which is within the range of 1.5%~2% for new wind turbine recommended by Danish Wind Industry Association. The O&M cost is also appropriate compared with other similar projects in the same region. Therefore, it is obviously unrealistic for the annual O&M cost to decrease significantly. Even the annual O&M cost decrease to zero, the project IRR would be 7.83%, which is still below the benchmark.
Electricity tariff increases by 22.3%	The tariff has been approved by NDRC as 0.5206 RMB/kWh (Including VAT) and local average beyond. Once the tariff was approved by the government, it is unlikely for the tariff to increase significantly in the context of the project activity.
Power generation increases by 25.0%	As discussed above, the wind power resources are assessed on the basis of 30 years regional wind resources statistics and 2-year onsite wind measurement at the proposed project site starting from January 2005 to December 2006. Meanwhile, the annual average wind speed in recent 10 years was keeping stable within 2.9 m/s~3.1 m/s according to the wind speed monitoring records of the local weather station. Therefore, it is unlikely the power generation increases significantly under the context of the project activity.

**In summary, the sensitivity analysis have sufficiently demonstrated in accordance with VVM version 01.2 paragraph 111 (e) that the Project is unlikely to be financial attractive without consideration of the expected CDM revenue and is hence additional.**

#### **3.5.4 Barrier analysis**

No other barrier analysis is applied in the PDD by the project proponent for the proposed project activity.



### 3.5.5 Common practice analysis

The common practice analysis was demonstrated in the PDD according to the *Tool for the demonstration and assessment of additionality, version 05.2/13/*. The validation team has validated the common practice analysis according to the VVM paragraph 119~120/6/ and the processes are substantiated in the context below.

#### (a).Geographical Sope of Common Practice

According to the *Tool for the demonstration and assessment of additionality, version 05.2*, the projects are consider similar if they are in the same country/region and/or rely on a broadly similar technology, are of a similar scale, and take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing, etc. The PDD chooses three criterions for identification of similar projects, i.e., 1) same country/region and environment; 2) relying on similar technologies; 3) similar scale; 4) take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing, which are considered appropriate.

##### 1). Same country/region and environment

The validation team has confirmed that the regulatory framework and investment environment for wind farm projects are only similar and comparable in the same Province. Therefore, it is realistic that the common practice is conducted within the Gansu Province where the proposed project is located.

##### 2). Relying on similar technologies

Since the proposed project utilizes renewable wind power resources for power generation, it is realistic that only windfarm projects are considered for common practice.

##### 3). Similar scale

Since the proposed project is large scale windfarm project with installed capacity of 201 MW, the small scale windfarm project with capacity below 15 MW is not deemed similar scale with the proposed project.

##### 4). Take place in a comparable environment with respect to regulatory framework, investment climate, access to technology, access to financing

It was confirmed by the validation team that the China Electric Power Industry has experienced a systematic reform in 2002 and the “*Tariff Competition for Electricity Supplied to the Grid*” was introduced ([http://www.sdpc.gov.cn/xwfb/t20050708\\_28096.htm](http://www.sdpc.gov.cn/xwfb/t20050708_28096.htm)). Therefore, the investment environment of power industry in China has materially changed after the year 2002.

Based on the above validation process, the validation team confirms that the geographical scope has been appropriately identified for the common practice analysis in accordance with VVM paragraph 119 (a)/6/.

#### (b). Assessment of Existence of Similar Projects

The similar projects were selected in the PDD according to the *China Windfarm Installed Capacity Statistics in 2007* published by China Wind Energy Association on February 28<sup>th</sup> 2008, which include statistical information of windfarm projects in China and represent local industry expertise from official sources in accordance with VVM paragraph 119 (b)/6/. The *China Windfarm Installed Capacity Statistics in 2007* has been widely used as the basic sources for common practice of other registered CDM windfarm projects in China. The UNFCCC database has also been used for identification of similar windfarm projects. Furthermore, a list of windfarm projects in Gansu Province has been provided in Annex 5 of the PDD.

### **(c).Essential Distinctions between the Project and Any Similar Projects**

After exclusion of CDM projects, only one similar windfarm project has been identified and listed in the Table B.5-4 of the PDD. The validation team has accessed in the information provided in the PDD and confirmed the project owner of Gansu Anxi Wind Farm Project is a registered company in Hong Kong and is not eligible for applying CDM in China at the time of project construction/64/. Since the project was making losses, the project owner was applying for Gold Standard VER to improve its financial status, which was confirmed by accessing at the Gold Standard Registry/65/. Therefore, the “Gansu Anxi Wind Farm Project” can be excluded from the similar project activities analysis.

Through cross-check with the specified criteria in Sub-step 4a in the PDD, the validation team thus confirms there are no any other similar projects as the proposed project in Gansu Province. Therefore, the validation team confirms that the proposed project is not common practice and hence additional in accordance with VVM paragraph 120/6/.

## **3.6 Monitoring**

The Project applies the approved monitoring methodology, ACM0002/Version 12.1.0 – “*Consolidated baseline methodology for grid-connected electricity generation from renewable sources*”. The monitoring plan, as described in Section B.7.2 of the PDD/1/, is confirmed to be documented in line with the requirements for wind power projects according to ACM0002 Version 12.1.0.

Since the Project is a new wind power project, the project emission is zero under ACM0002.

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

It has been verified that the electricity exported to and imported from the NWCPG will be continuously measurement and recorded on monthly basis by the project owner. In addition, the data will be cross-checked with the electricity sales receipts.

The baseline emissions are calculated as the product of the electricity supplied to the grid and the combined grid emission factor of NWCPG, which is determined ex-ante.



### 3.6.1 Parameters determined ex-ante

The baseline grid emission factor will be determined *ex-ante*, based on the most recent information available, and is calculated as a combined margin, consisting of the weighted average of the OM and BM emission coefficients. This combined margin emission coefficient will remain fixed during the first 7-year crediting period.

### 3.6.2 Parameters monitored ex-post

The main data that needs to be monitored ex-post is the amount of the electricity delivered to the grid from the Project, which will be continuously measurement through bidirectional meters installed at Changma West 330kV substation as confirmed in the One-line Diagram/56/. The installation position of the main meter and backup meter have been clearly identified in Figure B.3-1 of the revised PDD. The accuracy of the electricity meters is not less than 0.5S, and the electricity meters will be calibrated at least once a year.

The CDM monitoring officer will collect the measured electricity data every month and complete the reports. Receipts from electricity sales will also be obtained for cross-check. The data will be kept for 2 years following the end of the last crediting period.

### 3.6.3 Management system and quality assurance

According to the PDD, a CDM Project Management Team will be established for verification of the measurement, collection of sales receipts, collection of billing receipts of the power supplied by the grid to the wind farm and the calculation of the emissions reductions. The management structure for monitoring and work scope of each unit is illustrated in Figure B.7-1 of the PDD. By document review and onsite interview with the project owner, the validation team can therefore confirm the monitoring arrangements described in the monitoring plan are feasible within the project design.

## 3.7 Sustainable Development

The LoA for China DNA/3/, which contains the opinion regarding the contribution of the project to the sustainable development in China, has been received.

## 3.8 Environmental Impacts

The environmental impact of the Project has been reported in Section D of the PDD. The environmental impacts of the project were sufficiently assessed by means of an Environmental Impact Assessment (EIA) Report Table, which is in accordance with the Chinese Environment Impact Assessment Law. The environmental impact assessment (EIA) for the Project was carried out by Lanzhou University Environment Assessment and Research Institute in April 2008 and was approved by the Gansu Province Environment Protection Bureau on 6 August 2008.

According to the EIA report, the Project is located at gobi desert area, which is far from the residential area. No resettlement was identified in the EIA report of the Project and it was also confirmed by local governmental official. The

electromagnetism radiation, air pollution, noise, waste water, solid waste and landscape destruction emerging from project construction was alleviated through mitigation measures. The conclusion of the EIA report of the Project has been described in the PDD. According to the environmental impact assessment required by the host country, China, it can be verified that the impacts are not considered significant.

In addition, no significant environmental impacts were identified during onsite assessment. This is further confirmed by local environmental official and residents through onsite interview. No environmental complaint was received since the project commences its construction according to onsite interview.

### **3.9 Comments by Local Stakeholders**

Local stakeholder consultation meeting was arranged in 18 June 2008 and totally 45 questionnaires were delivered to the local stakeholders. In the survey, 45 questionnaires were received back from local stakeholders. The investigation included public advice from governmental official, workers and villagers near the proposed project site. The validation team has reviewed all the questionnaires received. The survey shows that the proposed project receives support from the local people.

The processes by which comments from local stakeholders have been invited and compiled, has been described within Section E of the PDD. Furthermore, representatives/vii/viii/ from the local community were interviewed. In general, the interviewees/vii/viii/ show adequate understanding of the nature of the project and agreed that the project would benefit the environment, society and economic development. The response is overall supportive.

Therefore, the validation team is able to confirm the adequacy of the local stakeholder consultation of the Project has been appropriately demonstrated.

### **3.10 Comments by Parties, Stakeholders and NGOs**

The PDD Version 01 of 22<sup>nd</sup> September 2010 was made publicly available on UNFCCC's climate change website (<http://cdm.unfccc.int/Projects/Validation/DB/8YH0DSVY0QJBE9D0M7O9GWB0ZOEHPX/view.html>) and Parties, stakeholders and NGOs were through the CDM website invited to provide comments during a 30 days period from 28<sup>th</sup> September 2010 to 27<sup>th</sup> October 2010, where no comments were received.

## **Appendix A**

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### **CDM VALIDATION PROTOCOL**

**CECIC Gansu Yumen Changma No.3 Wind Farm Project  
in  
P. R. China  
REPORT No. 01 997 9105061567**

**Table 1: Validation requirements**

Checklist question	Ref.	MoV*	Findings, comments, references, data sources	Draft conclusion	Final conclusion
<b>1. Approval</b>					
<p>1.1 Have Letters of Approval have been provided from all involved Parties?</p> <p>If yes, indicate:</p> <ul style="list-style-type: none"> <li>– when and by which Party the LoA has been issued, with a clear reference to the LoA itself and any supporting documentation;</li> <li>– whether the LoA was provided to the DOE by the project participants or directly by the DNA;</li> <li>– the means of validation employed to assess the authenticity of the document; and</li> <li>– by a clear statement, that the DOE considers the LoA to be valid.</li> </ul>	/1//3/	DR	<p>According to the PDD, the host party is People's Republic of China, and project participant from Host Country is: CECIC Wind-power (Gansu) Co., LTD.. The Annex I Party is the Japan, and project participants from Annex I country are Mitsubishi UFJ Morgan Stanley Securities Co., Ltd.. The LoA from China has been received while the LoA from Japan has not been received.</p> <p>CAR1</p> <p>The Letters of Approval from Japan is not received. Further, the MoC shall also be provided.</p>	<del>CAR1</del>	OK (Refer to Table 2)

\* MoV = Means of Verification, DR = Document Review, I = Interview, www = internet search.

1.2 Are all Parties, who issued the LoA, Parties to the Kyoto Protocol <u>and</u> is this stated in the LoA?	/1//3/	DR	<p>-China has ratified the Kyoto Protocol on 30th August, 2002.</p> <p>-Japan has ratified the Kyoto Protocol on 4th, June, 2002.</p> <p>DNA of China is National Development and Reform Commission;</p> <p>DNA of Japan is the Liason Committee for the Utilization of the Kyoto Mechanisms.</p> <p>CAR1</p>	<del>CAR1</del>	OK (Refer to Table 2)
1.3 Is every LoA from the Parties involved issued by an organisation listed as Designated National Authority (DNA) on the UNFCCC web site? <i>Indicate the official name of the DNA and contact person name.</i>	/1//3/	DR WWW	<p>Yes.</p> <p>-DNA of China is National Development and Reform Commission. The contact persons of China DNA are Mr. Su Wei and Mr. Wang Shu.</p> <p>- DNA of Japan is the Liason Committee for the Utilization of the Kyoto Mechanisms.</p> <p>The information is available at UNFCCC website: <a href="http://cdm.unfccc.int/DNA/index.html">http://cdm.unfccc.int/DNA/index.html</a>.</p>	<del>CAR1</del>	OK (Refer to Table 2)
1.4 Is the participation in the CDM project activity voluntary <u>and</u> is this stated in all LoA? <i>Indicate the source of proof.</i>	/1//3/	DR	CAR1	<del>CAR1</del>	OK (Refer to Table 2)
1.5 Is the LoA unconditional with respect to 1.2 to 1.4?	/1//3/	DR	CAR1	<del>CAR1</del>	OK (Refer to Table 2)

1.6	Is the title of the CDM project activity as given in the PDD identical with the title given in all LoA and Modalities of Communication? <i>Provide Yes/No answer, and include details into Tables 2 accordingly.</i>	/1//3/	DR	The MoC has not been received. CAR1	CAR1	OK (Refer to Table 2)
1.7	If any of provided LoA contains additional specification of the CDM project activity (PDD version number, validation report version number, amount of ER, etc.) are those specifications valid and consistent with other documents?	/1//3/	DR	CAR1	CAR1	OK (Refer to Table 2)
1.8	Does the project activity involve any public funding from Annex I Parties? <u>If yes</u> , has Annex I Party provided a written confirmation that the use of such funding does not lead to the diversion of the official development assistance.	/1//3/	DR I	The validation team has reviewed the loan commitment letter dated on 22 <sup>nd</sup> August 2008 and the bank initially agreed to provide total loan of about 1.3 billion RMB, which is over 67% of the total statistic investment cost. The left investment is arranged by the project owner according to onsite interview. Therefore, no indication of ODA involvement has been identified.		OK
<b>2. Participation (VVM E.2)</b>						
2.1	Are the Parties and project participants (PP) listed in the section A.3 of the PDD correctly <u>and</u> is this information consistent with the contact details provided in Annex 1 of the PDD?	/1/	DR	Yes, the Parties and project participants (PP) have been listed in the section A.3 of the PDD correctly and the information are consistent with the contact details provided in Annex 1 of the PDD.		OK

2.2	Has every Party involved approved the participation of each corresponding PP, either by means of a LoA or by a separate written document? <i>Indicate Yes / No answer and describe all inconsistencies in the Tables 2 accordingly.</i>	/1//3/	DR	CAR1	CAR1	OK (Refer to Table 2)
<b>3. Project Design Document (VVM E.3)</b>						
3.1	Is the PDD presented for validation based on the latest template available at the UNFCCC website? <i>Indicate Yes / No answer and describe all inconsistencies in the Tables 2 accordingly.</i>	/1//10/	DR www	Yes.		OK
3.2	Has the PDD been established in accordance with the CDM requirements for completing PDDs issued by the CDM EB?	/1//11/	DR www	Yes, the PDD has been established according to CDM Executive Board, Guidelines for Completing the Project Design Document, and the Proposed New Baseline and Monitoring Methodologies, Version 07 EB41, 2 August 2008.		OK
<b>4. Project Description (VVM E.4)</b>						



<p>4.1 Does the PDD contain a description, which provides the reader with a clear understanding of the precise nature of the project activity and the technical aspects of its implementation?</p> <p>4.1b) Is the description (incl. any process flow-charts, Spreadsheets etc.) complete, coherent and consistent with the provisions of the monitoring plan?</p>	/1/	DR	<p>CAR2 Please refer to Page 3, Section A.4.1.4 of the PDD, the geographical coordinates shall be presented in four decimals with +/- signs. A detailed windfarm layout, which clearly indicates the detailed coordinates of the 134 wind turbines, should be provided.</p> <p>CAR3 It shall be clearly stated what is the existing scenario prior to the project implementation in Section A.4.3 of the PDD.</p> <p>CL1 The technical lifetime of the wind turbine generator should be provided in the Table A.4-1. The technical specification of the generator should also be provided.</p> <p>CL2 The electricity connection system should be described on how the electricity is exported to the Northwest China Power Grid in Section A.4.3 of the PDD.</p>	<p><del>CAR2</del> <del>CAR3</del> <del>CL1</del> <del>CL2</del></p>	<p>OK (Refer to Table 2)</p>
<p>4.2 In the case of greenfield project activity, is the project design described sufficiently by means of specifications, drawings and manuals?</p> <p><i>Provide Yes/No answer and indicate the documents which have been reviewed in relation to the issue.</i></p>	/1/	DR I	<p>Yes, the project is newly-built windfarm project and the Feasibility Study Report has been reviewed that the project design has been sufficiently described.</p>		<p>OK</p>

4.3	Does the project activity reflect current good practices, uses state of the art technology or would the technology result in a significantly better performance, than any commonly used technologies in the host country? <i>Provide the description of how validation has been carried out and what comparisons have been made.</i>	/1/	DR	The Project is a new wind power project which uses domestically-produced wind turbine generators and the technology is state of art.	OK
4.4	In cases where the project activity involves the alteration of an existing installation or process, does the PDD provide a clear description of the differences between the project and the pre-project scenario? <i>Please, provide Yes/Now answer and update Tables 2, 3 and 4 accordingly, if there is anything unclear in the provided description.</i>	/1/	DR I	Not applicable, the project activity is a newly-built wind power project and there are no any other existing installations around the project site, which was confirmed by site assessment and interview with local development and reform commission.	OK
<b>5. Baseline and Monitoring methodology</b>					
<b>5.1 General requirements</b>					
5.1.1	Is the methodology used in the project activity approved by the CDM EB <u>and</u> is the selected version still valid?	/1/,/7/	DR www	Yes, the ACM0002 Version 12.1.0 is approved methodology by CDM EB and is the latest version.	OK
<b>5.2 Applicability of the selected methodology</b>					

<p>5.2.1 Does the project activity qualify under the criteria for small-scale CDM project activities set out in § 6 (c) of decision 17/CP.7 and Annex II of the Modalities and Procedures for the CDM?</p> <p><i>Please provide Yes/No response and description of how this was validated.</i></p> <p><i>In case of calculated emission reductions varying over time, SSC-applicability limits must be met for every single year in any of the max. 3 subsequent crediting periods.</i></p>	/1/,/7/	DR	Not applicable since the project is a large-scale windfarm project with a total installed capacity of 201MW		OK
<p>5.2.1.1 If yes, does the PDD extensively demonstrates and confirms that the small-scale project activity is not a debundled component of a larger project?</p> <p><i>Please indicate Yes/No answer. In case of positive conclusion provide details of the validation measures taken and data found during the procedure. Otherwise amend the Tables 2, 3 and 4 accordingly.</i></p>	/1/,/7/	DR	Not applicable.		OK
<p>5.2.2 Are all applicability conditions of the selected baseline and monitoring methodology and all tools involved satisfied by the project activity?</p> <p><i>Please indicate Yes/No answer. In case of positive conclusion provide details of the validation measures. Otherwise amend the Tables 2 accordingly.</i></p>	/1/,/7/	DR	Yes.		OK
<p>5.2.3 Is the selection of the applied baseline and monitoring methodology justified?</p>	/1/, /7/	DR	Yes.		OK

5.2.4 Is the selected methodology correctly quoted in all related documents?	/1/, /7/	DR	Yes.		OK
5.2.5 Does the PDD sufficiently describe all the GHG emission sources or sinks occurring as a result of project activity, which have not been accounted for under the selected methodology and are expected to contribute more than 1% of the overall expected average annual emission reductions? <i>Provide Yes/No answer. Indicate the sources or sinks of GHG, which were proved to be negligible. Otherwise amend the Tables 2, 3 and 4 accordingly.</i>	/1/, /7/	DR	The project utilizes renewable wind power resources and no fossil fuel will be consumed during normal operation. The internal electricity consumption will be imported from the Grid. Furthermore, the greenhouse gas emissions, emerging from the power plant construction, fuel handling and land inundation, need not be considered according to applied methodology.		OK
<b>5.3 Project boundary</b>					
5.3.1 Does the PDD correctly describe the project boundary? <i>Provide Yes/No answer. And amend the Tables 2, 3 and 4, if needed.</i>	/1/, /7/, /14/	DR	Yes, the project boundary has been correctly described in line with the applied methodology.		OK
5.3.2 Does the PDD correctly indicate and describe the emission sources and sinks of GHG gases that are included in the project boundary?	/1/, /7/, /14/	DR	Yes.		OK
5.3.3 In cases where the methodology allows project participants to choose whether a source or gas is to be included in the project boundary, is the choice explained and justified by PPs?	/1/, /7/, /14/	DR I	Not applicable, the applied methodology does not provide any options for project participants to choose whether a source or gas is to be included in the project boundary.		OK
<b>5.4 Baseline identification</b>					

5.4.1 Has the procedure contained in the selected methodology to identify the most reasonable baseline scenario been applied correctly and documented in the PDD?	/1/, /7/	DR I	Yes, the ACM0002 Version 12.1.0 has contained the detailed procedure to identify the baseline scenario, which has been correctly applied by the PDD.		OK
5.4.1.1 Is the identified baseline scenario plausible?	/1/, /7/	DR	Yes.		OK
5.4.1.2 Are all assumptions stated in a transparent and conservative manner?	/1/, /7/	DR	Idem.		OK
5.4.2 Does the selected methodology require the use of tools <u>and</u> does PDD reflects that correctly?	/1/, /7/, /13/, /14/	DR	Yes, the relevant tools have been correctly reflected in the PDD.		OK
5.4.2.1 Were all the tools applied correctly?	/1/, /7/, /13/, /14/	DR www	Yes.		OK
5.4.3 In case the methodology requires several alternative scenarios to be considered in the identification of the most reasonable baseline scenario, have all scenarios been considered <u>and</u> have no reasonable alternative scenario been excluded?	/1/, /7/	DR	Not applicable. The ACM0002 version 12.1.0 does not require several alternative scenarios for the new windfarm project and the baseline scenario has been clearly prescribed by the methodology.		OK
5.4.3.1 Has the choice of the baseline scenario been done using conservative assumptions?	/1/, /7/	DR	Yes, the baseline scenario has been established using conservative assumptions.		OK
5.4.4 Is the identified baseline scenario reasonable according to the assumptions, calculations and rationales used in the PDD and other reference sources?	/1/, /7/	DR	Yes, the identified baseline scenario is reasonable.		OK

5.4.6 Does the PDD describe how the national and sectoral policies relevant to the baseline scenario have been identified and considered in the PDD?	/1/, /7/	DR www	Yes, the PDD has described the relevant national and sectoral policies to identification of baseline scenario.		OK
5.4.7 Does the PDD provide a verifiable description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the project activity?	/1/, /7/	DR	Yes, the PDD provide a verifiable description of the identified baseline scenario.		OK
<b>5.5 Algorithm and/or formulae used to determine emission reductions</b>					
5.5.1 Are all calculations applied and documented according to the selected methodology and in a complete and transparent manner?  5.5.1b) Are correct units applied and consistency between parameter dimensions and parameter value ensured? See also Question 4.1.b) with respect to consistency of parameter values between calculation spreadsheets and PDD.	/1/, /2/, /7/, /17/, /26/	DR	CAR4 Please refer to Page 17, Section B.6.1 of the PDD, the formula for calculating the baseline emission shall be revised in line with the Formula (6) in Page 8 of the ACM0002 Version 12. CAR5 Please refer to Page 17, Section B.6.1 of the PDD, "Step 1. Identify the relevant electricity systems", there is no electricity exchange between NWPG and NCPG, while the NWPG exports electricity to Central China Power Grid (CCPG) according to the China DNA's Guideline on OM calculation published in July 2009. CL3 The PDD quoted the China DNA's reference data of the OM&BM emission factors published on 2nd July 2009. However, the PDD was published for global stakeholder consultation in	<del>CAR4</del> <del>CAR5</del> <del>CL3</del>	OK (Refer to Table 2)

			September 2010, which is 1 year later. Therefore, it should be clarified whether the China DNA's reference data of 2nd July 2009 are the most recent data available at the time of submission of the CDM-PDD to the DOE for validation.		
5.5.2 In case the methodology allows a selection between different options for equations or parameters, has adequate justification been given and have the correct equations and parameters been used, in accordance with the methodology selected?	/1/,/2/, /7/, /17/,/26/	DR	Idem	<del>CAR4</del> <del>CAR5</del> <del>CL3</del>	OK (Refer to Table 2)
5.5.3 In case some data and parameters will not be monitored throughout the crediting period, but have already been determined and fixed, are all data sources, assumptions and calculations correct, applicable to the proposed CDM project activity and conservative?	/1/,/2/,/7/, /17/,/15/,/26/	DR	CAR6 Please refer to PDD Section B.6.2, the data sources shall be precisely described.	<del>CAR6</del>	OK (Refer to Table 2)
5.5.4 In case data and parameters will be monitored on implementation and hence become available only after validation of the project activity, are the estimates provided in the PDD for these data and parameters reasonable?	/1/,/2/, /7/, /17/,/26/	DR	CAR7 Please refer to PDD Section B.7.1, the electricity watt-hour meter shall be revised as electricity meter. The source of data shall be revised as "project activity site".	<del>CAR7</del>	OK (Refer to Table 2)
5.5.5 Have the major risks and uncertainties, which can influence the emission reduction estimates, been identified and addressed in the PDD?	/1/,/2/,/7/, /17/,/26/	DR	No major risks and uncertainties have been identified in the PDD		OK
<b>5.6 Leakage</b>					



5.6.1 Has the leakage been identified and calculated according to the approved methodology?	/1/,/2/, /7/	DR	No leakage needs to be considered for the proposed project according to ACM0002.		OK
5.6.2 Have the leakage been addressed in complete, conservative and substantiated manner?	/1/,/2/, /7/	DR	Not applicable.		OK
5.6.3 Are uncertainties in the leakage emission estimates properly addressed?	/1/,/2/, /7/	DR	Not applicable.		OK
<b>6. Methodology-related issues for afforestation or reforestation CDM project activities</b>					
Add specific A/R requirements – if applicable!	/1/,/7/	DR	Not applicable for this CDM project activity since the Project is a windfarm project.		OK
<b>7. Additionality</b>					
<b>7.1 Prior consideration of the CDM (VVM E.6.III.a)</b>					
7.1.1 Is there documented evidence provided by the project participants on how and when the decision to proceed with the project activity was taken?	/1/,/9/	DR I	Yes, the project owner made the investment decision with expected CDM revenue on 15 <sup>th</sup> April 2009, which is confirmed in the Board Meeting Minutes.		OK
7.1.2 Is the starting date of the project activity, reported in the PDD, in accordance with the “Glossary of CDM terms” <u>and</u> CDM VVM (§97)?  Note: Confirm the starting date indicated in C.1. is consistent within the PDD, in particular with respect to the project implementation history.	/1/,/9/	DR I	Yes, the starting date is reported as 28 <sup>th</sup> April 2009 which is confirmed as the earliest date on which the real actions begin according to the latest Glossary of CDM Terms.		OK

7.1.3 Is the date stated in the provided evidence consistent with other available evidence (e.g. dates of construction, purchase orders for equipment)?	/1/,/9/	DR I	Idem.		OK
7.1.4 If the project was not published and the starting date is on or after 2 <sup>nd</sup> August 2008, was it possible to receive from UNFCCC secretariat and/or DNA a written confirmation that PPs previously informed the above entities on commencement of the project activity and of their intention to seek CDM status?	/1/,/9/,	DR I	Yes.		OK
7.1.5 For the project activities with a starting date before 2 <sup>nd</sup> August 2008 and before the actual publication, was there enough evidence presented to prove that PPs were previously aware of CDM?	/1/,/9/,	DR I	Not applicable since the starting date of the project is after 2 <sup>nd</sup> August 2008.		OK
7.1.6 For the project activities with a starting date before 2 <sup>nd</sup> August 2008 and before the actual publication, was there enough evidence presented to prove that CDM benefits have been a decisive factor in the decision to proceed with the project activity?	/1/,/9/,/13/	DR I	Idem		OK
7.1.7 Does the individual or body that took the decision to proceed with the project activity have/had the authority to do so?	/1/,/9/,/13/	DR	Yes.		OK

7.1.8 For the project activities with a starting date before 2 <sup>nd</sup> August 2008 and before the actual publication, was there enough evidence presented to prove that PPs were taking continuing and real actions to secure CDM status for the project in parallel with its implementation?	/1/,/9/,/13/	DR	Idem		OK
7.1.7 In case there is a significant gap between the start date of the project activity and the commencement of validation, how was it possible for the project participant to commit funds to the project in advance of receiving a positive validation opinion?	/1/,/9/,/13/	DR	The time gap between the start date of the project activity and commencement of validation is within one and half a year and not significant. Further, continuing CDM actions have been observed during this period.		OK
<b>7.2 Identification of alternatives</b>					
7.2.1 Does the PDD identify and list credible alternatives to the CDM project activity in order to determine the most realistic baseline scenario, unless selected approved methodology prescribes/identifies the baseline scenario and no further analysis is required?	/1/,/6/, /7/,/13/	DR	Not applicable since the ACM0002 has prescribed the baseline scenario and no further analysis is required.		OK
7.2.2 Does the list of alternatives include as one of the options that the project activity is undertaken without being registered as a CDM project activity?	/1/,/6/, /7/,/13/	DR	Idem.		OK

<p>7.2.3 Does the list contain all realistic/credible alternatives that the DOE, on the basis of its local and sectoral knowledge, considers to be viable means of supplying the outputs or services that are to be supplied by the project activity?</p> <p><i>Note: All alternatives listed in the selected methodology should be included, as well as those not covered by the methodology.</i></p>	/1/,/6/, /7/,/13/	DR	Idem.		OK
<p>7.2.4 Is the exclusion of the alternatives for legal reasons justified?</p> <p><i>Note: Some alternatives might be illegal, according to the local regulations, but still widely practiced due to lack of enforcement. It should be verified.</i></p>	/1/,/6/, /7/,/13/	DR	Idem.		OK
<b>7.3 Investment Analysis</b>					
<p>7.3.1 Are all sources of revenues (including savings) have been considered in the PDD and all calculations?</p>	/1/,/2/,/6/, /7/,/8/,/13/	DR	<p>CL4 Please refer to the IRR worksheet, the cash inflow and outflow should be clearly presented. The emission reduction calculation spreadsheets should be submitted in separate documents, which are clearer for understanding.</p> <p>CL5 It should be clarified how the project assessment period was selected. From the IRR calculation worksheet, the electricity sale revenues have been considered from the Year 3 to Year 25, where totally 22 years operation has been included. However, it was confirmed that the technical lifetime of the wind turbine generators are 20 years</p>	<p>CL4 CL5</p>	<p>OK (Refer to Table 2)</p>

			according to the wind turbine contracts. Further, it is observed that the annual electricity outputs in the Year 3, Year 24 and Year 25 are relevant lower than the Year 4 to Year 23. Please clarify it.		
7.3.2 Is the type of investment analysis selected correctly in the PDD?	/1/,/2/,/6/, /7/,/8/,/13/	DR	Yes, the option III, benchmark analysis is selected and correct according to the additionality tools.		OK
7.3.3 Is the selected financial indicator chosen and applied correctly?	/1/,/2/,/6/, /7/,/8/,/13/ ,/18/	DR www	Yes.		OK
7.3.4 Is the guidance on IRR calculation and assessment correctly applied? <i>Note: Means of validation should be recorded.</i>	/1/,/2/,/6/, /7/,/8/,/13/	DR	CL6 It should be transparently presented in the IRR spreadsheets on 1) how the depreciation cost and interest cost (or loan repayment) is calculated; 2) how the VAT cost and VAT surtax (i.e. urban construction and maintenance tax, education levy) is calculated.	CL6	OK (Refer to Table 2)
7.3.5 In case project participants use values from Feasibility Study Reports (FSR) is it possible to verify that the period between the FSR date and investment decision was reasonably short and FSR values did not change materially?	/1/,/2/,/6/, /7/,/8/,/13/	DR	Yes, the FSR was completed in April 2009 and the investment decision was made on 15 <sup>th</sup> April 2009. The time gap is within 1 month, which is sufficiently short.		OK

<p>7.3.6 Are all the values consistent between FSR and PDD <u>and</u> are inconsistencies properly justified?</p>	<p>/1/,/2/,/6/, /7/,/8/,/13/</p>	<p>DR www</p>	<p>Pending on CL4, CL5, CL6. CL14 It was observed in the IRR spreadsheet that the “known highest” and “8% IRR” are included. Therefore, the PP should explain the calculation process of these two worksheets during sensitivity analysis in the Section B.5 of the PDD. In particular, the highest applicable tariff for the proposed project should be justified according to the EB 54 paragraph 53. Further, necessary explanations should also be provided in the IRR spreadsheets. CL15 The VAT calculation should be conducted in accordance with the “Notification on VAT Policy for the Resources Comprehensive Utilization and Other Products” and “Provisional VAT Tax Law”, which was referenced in the Page 14-2 and Table 14.3 of the approved FSR. CL16 It should be clarified how the residue value rate and depreciation period has been determined in the IRR spreadsheets.</p>	<p><del>CL4</del> <del>CL5</del> <del>CL6</del> CL14 <del>CL15</del> CL16</p>	<p>OK (Refer to Table 2)</p>
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7.3.7 Were all the values from FSR applicable and valid at the time of the investment decision?	/1/,/2/,/6/, /7/,/8/,/13/	DR www	Pending on CL4, CL5, CL6. CL7 The evidence for selection of the tariff post 30,000 hours should be provided (i.e. <i>Power Engineering Economic Evaluation and Tariff</i> ).	CL4 CL5 CL6 CL7	OK (Refer to Table 2)
7.3.8 Is it reasonable to assume that no investment would be made at a rate of return lower than the benchmark by, for example, assessing previous investment decisions by the project participants or some verifiable circumstances that have lead to a change in the benchmark?	/1/,/2/,/6/, /7/,/8/,/13/	DR I	Not applicable since the benchmark IRR is the basis for financial assessment by the project owner to make investment decisions for wind power generation project in China.		OK
7.3.9 Is the Investment Analysis prepared in compliance with the latest version of the "Guidance on the Assessment of Investment Analysis" as provided by the CDM EB?	/1/,/2/,/6/, /7/,/8/,/13/		CL8 It should be clarified on what variations of the selected financial indicators (i.e. static investment, annual O&M cost, net grid-connected electricity and tariff) the project IRR reach benchmark and why such conditions are unlikely to happen.	CL8	OK (Refer to Table 2)
<b>7.4 Barrier analysis</b>					
7.4.1 Are there any issues addressed in the barrier analysis that have a clear impact on the financial viability of the project activity and that shall be assessed by an investment analysis?	/1/,/6/, /7/	DR	Barrier analysis has not been adopted in the PDD and this is in line with the applied methodology.		OK



7.4.2 Do the listed barriers exist <u>and</u> is their existence substantiated? Note: (a) by independent sources of data such as relevant national legislation, surveys of local conditions and national or international statistics and/or (b) by interviews with relevant individuals: including members of industry associations, government officials or local experts if necessary?	/1/,/6/, /7/	DR	Idem.		OK
7.4.3 Would any of the identified barriers prevent the implementation of the project activity but not equally prevent the implementation of the possible alternatives, in particular the implementation of the identified baseline scenario?	/1/,/6/, /7/	DR	Idem.		OK
<b>7.5 Common practice analysis</b>					
7.5.1 If the PPs claim in the PDD that CDM project activity is the “first of its kind”, is it justified?	/1/,/6/, /7/,/13/	DR I	No, the CDM project activity utilizes wind power technology, which has been widely applied in China and state of art.		OK
7.5.2 Are the geographical scope of the project activity identified correctly?	/1/,/6/, /7/,/13/	DR	Yes, Gansu Province is identified as the geographical scope.		OK
7.5.3 Does the PDD provide an explanation why this region was selected and deemed more appropriate <u>and</u> is this explanation traceable and reliable?	/1/,/6/, /7/,/13/	DR	Yes.		OK

7.5.4 Are there similar operational project activities, other than CDM activities, “widely observed and commonly carried out” in the defined region? <i>Note: Use official sources and local and industry expertise.</i>	/1/,/6/, /7/,/13/	DR	CL9 Please refer to PDD Page 14, Step 4, it should be clearly described what data source has been selected for identification of similar projects and clarify whether the data source is reliable and appropriate.	CL9	OK (Refer to Table 2)
7.5.5 In case there are similar commercially operated project activities, other than CDM activities, already “widely observed and commonly carried out” in the defined region, are there essential distinctions between the CDM project activity and the other similar activities?	/1/,/6/, /7/,/13/	DR	Pending on CL9.	CL9	OK (Refer to Table 2)
<b>8. Monitoring plan</b>					
8.1 Are all parameters required by the selected approved methodology or tool identified <u>and</u> listed in the PDD? <i>Note: not all methodologies indicate monitoring parameters in tabular form or by reference to the variables used in formulae; Nonetheless, all parameters indicated in the methodology and applicable to the project must be listed in the PDD, omissions due to non-applicability be justified.</i>	/1/,/6/, /7/	DR	CAR6 Please refer to PDD Section B.6.2, the data sources shall be precisely described.	CAR6	OK (Refer to Table 2)
8.2 Is the measurement method clearly stated for each value to be monitored and deemed appropriate? <i>Does the monitoring plan record data in the original form as generated, providing QA/QC procedures to be used on the measurement method?</i> <i>Note 1: if the measurement unit is different</i>	/1/,/6/,/7/	DR	CL10 The supporting evidence (e.g. one-line diagram or power purchase agreement) should be provided for identification of the monitoring electricity meters.	CL10	OK (Refer to Table 2)

<p>from the unit to be applied in the methodology, describe the actual measurement and any according conversion method to match the unit used in the methodology.</p> <p>Example: liquid fuels may be monitored as weight or volume. If measured as volume, the measurement method and equipment including the according unit (e.g., liter) shall be described in B.7.1, as well as the conversion into weight units as needed.</p> <p>Note 2: Data on invoices / delivery slips may be used for QA/QC purposes, but do not constitute an actual means of monitoring and thus cannot be applied as a source of data.</p>					
<p>8.3 Are values of the ex-ante parameters / monitoring parameters selected correctly and conservative in accordance to methodology or tools?</p> <p>See the NOTE in section 3.6.1 above!</p>	/1/,/6/,/7/	DR	See CAR6.	CAR6	OK (Refer to Table 2)
<p>8.4 Is the measurement equipment for each parameter described and deemed appropriate?</p>	/1/,/6/,/7/	DR	<p>CAR7</p> <p>Please refer to PDD Section B.7.1, the electricity watt-hour meter shall be revised as electricity meter. The source of data shall be revised as "project activity site".</p>	CAR7	OK (Refer to Table 2)
<p>8.5 Is the measurement accuracy addressed and deemed appropriate?</p>	/1/,/6/,/7/	DR	See CL10.	CL10	OK (Refer to Table 2)

8.6	Are procedures in place on how to deal with erroneous measurements <u>and</u> are the corrective actions identified?	/1/,/6/,/7/	DR	Yes, the procedures have been identified in the monitoring plan of the PDD.		OK
8.7	Is the frequency of measurement identified and deemed appropriate?	/1/,/6/,/7/	DR	Yes, the electricity imported and exported will be continuously monitored and monthly recording.		OK
8.8	Is the monitoring plan documented according to the approved methodology and in a complete and transparent manner?	/1/,/6/,/7/	DR	Yes.		OK
8.9	Are the sampling, measurement methods and procedures defined? <a href="#">Where applicable, refer to the GENERAL GUIDELINES<sup>1</sup> FOR SAMPLING AND SURVEYS FOR SMALL-SCALE CDM PROJECT ACTIVITIES</a>	/1/,/6/,/7/	DR	Yes.		OK
8.10	Are procedures identified for maintenance of monitoring equipment and installations?	/1/,/6/,/7/	DR	Yes, the procedures are identified for maintenance of monitoring equipment and installations.		OK
8.11	Are the equipment calibration intervals identified and justified?	/1/,/6/,/7/	DR	CL11 According to the PDD Section B.7.1, the electricity meters will be calibrated annually. However, during onsite interview with the project owner, the electricity meters will be calibrated every 3 months. Therefore, please confirm the calibration frequency.	CL11	OK (Refer to Table 2)

8.12 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/,/6/, /7/	DR	CAR8 The procedures for day-to-day records handling shall be identified in the PDD Section B.7.2.	<del>CAR8</del>	OK (Refer to Table 2)
8.13 Are the monitoring arrangements described in the monitoring plan feasible within the project design?	/1/,/6/, ,/7/	DR	CL12 Please refer to PDD Section B.7.2, Page 30, Figure B.7-1, the operational and management structure of the monitoring plan is not clear enough. The authority and responsibility of monitoring staff should be clearly described.	CL12	OK (Refer to Table 2)
8.14 Are the means of implementation of the monitoring plan, including the data management and quality assurance and quality control procedures, sufficient to ensure that the emission reductions achieved by / resulting from the project activity can be reported ex post and verified?	/1/,/6/,/7/	DR	CL13 Please refer to PDD Section B.7.2, the data management, quality assurance and quality control procedures should be sufficiently described as part of monitoring plan to ensure that the emission reductions achieved by the project activity can be reported ex post and verified.	CL13	OK (Refer to Table 2)
8.15 Do the PPs make provisions for personnel training needs?	/1/,/6/,/7/	DR I	The PPs have made provisions for personnel training for operation and maintenance.		OK
8.16 Is the authority and responsibility of overall project management clearly described?	/1/,/6/, /7/	DR	Pending on CL12.	<del>CL12</del>	OK (Refer to Table 2)
8.17 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	/1/,/6/, /7/	DR	Yes, the emergency preparedness for unintended emission has been identified in the PDD.		OK

8.18 Are procedures identified for review of reported results/data?	/1/,/6/, /7/	DR	Yes.		OK
8.19 Is the data archiving period for this project activity stated in the PDD and appropriate? <i>Note: All archived monitoring data, required for verification and issuance, should be kept for at least two years after the end of the crediting period or the last issuance of CER.</i>	/1/,/6/,/7/	DR	Yes, all data including calibration records will be kept until two years after the end of the last crediting period of the CDM project.		OK
<b>8.2 Monitoring of the leakage</b>					
8.2.1 Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	/1/,/6/,/7/	DR	No leakage needs to be considered for new windfarm project under the applied methodology.		OK
8.2.2 Is the choice of project leakage indicators made according to selected methodology in a reasonable and conservative manner? <i>Note: local knowledge and sectoral expertise shall also be considered.</i>	/1/,/6/, /7/	DR	Idem.		OK
8.2.3 Is the measurement method clearly stated and deemed appropriate for each leakage value?	/1/,/6/,/7/	DR	Idem.		OK
<b>9. Sustainable development</b>					
9.1 Does the LoA from the Host country DNA contain the confirmation that the proposed CDM project activity contributes to the sustainable development of the host Party?	/1/, /3/	DR I	Yes.		OK

9.2 If PDD indicates any additional environmental benefits of the project, other than GHG emission reductions, were those benefits properly substantiated?	/1/, /3/	DR I	Yes, the PDD indicates the project can mitigate local air pollution and create local employment opportunities. These benefits have been confirmed properly substantiated.		OK
<b>10. Stakeholders' consultation and comments</b>					
10.1 Were the stakeholders identified in appropriate and complete manner?	/1/, /49/	DR I	Yes.		OK
10.2 Are the identified stakeholders plausible?	/1/, /49/	DR I	Yes, the identified stakeholders are plausible according to the stakeholder consultation questionnaires.		OK
10.3 Does PDD describe the means being used to invite local stakeholder's comments?	/1/,	DR I	Yes.		OK
10.4 Were those means appropriate?	/1/,	DR I	Yes.		OK
10.5 Was the project presented to the stakeholders in unbiased manner?	/1/,	DR I	Yes.		OK
10.6 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 I	The stakeholder consultation process is not required for the proposed windfarm project.		OK
10.7 Is a summary of the stakeholder comments provided in the PDD?	/1/,	DR I	Yes.		OK
10.8 Has due account of any stakeholder comments been taken by PPs and reflected in the PDD?	/1/,	DR I	Yes.		OK
<b>11. Environmental impacts</b>					



11.1 Is the documentation supplied by the PPs regarding environmental impacts relevant and accurately reflected in the PDD?	/11./29./30/	DR I	Yes, the documentation regarding the environmental impacts is relevant and has been accurately reflected in Section D of the PDD.		OK
11.2 Is an environmental impact assessment (EIA) required for the CDM project activity? <i>Note: determine by using a review of relevant legislation and local expertise.</i>	/11./29./30/	DR	An environmental impact assessment report table is required according to Classification Directory for Environmental Impact Assessment of Construction Project (Effective from 1 January, 2003 to 1 October, 2008) issued on 19 July, 2002.		OK
11.3 In case an EIA is required, has the EIA has been approved by local authorities and is the outcome accurately reflected in the PDD?	/11./29./30/	DR I	Yes, the EIA report table was accomplished Lanzhou University Environment Assessment and Research Institute in April 2008.		OK
11.4 Does the PDD include a brief description of the environmental effects of the project, including transboundary?	/11./29./30/	DR I	Yes, the environmental impacts were considered insignificant.		OK
11.5 Are those effects properly addressed in the design of the project activity?	/11./29./30/	DR I	Yes, the negative environmental impacts are alleviated through mitigation measures as reported in the PDD.		OK
11.6 Does the project comply with environmental legislation in the host country?	/11./29./30/	DR I	Yes, this is confirmed by officer from local environmental protection bureau and EIA report has been approved by Gansu Province Environment Protection Bureau on 6 <sup>th</sup> August 2008.		OK

**Table 2: List of Requests for Corrective Action (CAR) and Clarification (CL)**

Observation (CAR/CL)	Reference in Table 1	Summary of project owner response	Validation team conclusion
CAR1 The Letters of Approval from Japan is not received. Further, the MoC shall also be provided.	1.1-1.7 2.2	MOC: Completed MOC was submitted to the DOE.  Japanese LOA: Japanese LOA was obtained and was submitted to the DOE. Finally contact details of PDD annex I was revised to be consistent with the MOC.	OK.  The LoA from Japan and the MoC have been received and checked to be consistent with the revised PDD.  The CAR is therefore closed.
CAR2 Please refer to Page 3, Section A.4.1.4 of the PDD, the geographical coordinates shall be presented in four decimals with +/- signs. A detailed windfarm layout, which clearly indicates the detailed coordinates of the 134 wind turbines, should be provided.	4.1	Coordinates in the PDD were revised. In addition, the coordinates are given in both Degrees coordinate system (with four decimals) and DMS (Degree, Min, Sec) coordinate system.  Furthermore, coordinate of 134 turbines and a site layout map were also provided to DOE.	OK.  The geographical coordinates have been revised in the PDD and consistent with the general windfarm layout. The general windfarm layout has identified the detailed coordinates of the 134 wind turbines.  The CAR is therefore closed.
CAR3 It shall be clearly stated what is the existing scenario prior to the project implementation in Section A.4.3 of the PDD.	4.1	Added following statement in the PDD  " Prior to the Project implementation, needed electricity of the region was generated by existing power plants in the NWPG mostly conventional fossil fuel based thermal power plants, resulting in high levels of CO2 emissions".	OK.  It has been revised in the PDD.  The CAR is therefore closed.

<p>CAR4 Please refer to Page 17, Section B.6.1 of the PDD, the formula for calculating the baseline emission shall be revised in line with the Formula (6) in Page 8 of the ACM0002 Version 12.</p>	<p>5.5.1 5.5.2</p>	<p>Formula for <math>BE_y</math> was revised in accordance with formula (6) of the ACM0002 ver.12.1.</p> <p>Formula (7) of the methodology, <math>EG_{PJ,y}</math> calculation method, was added to baseline section of B.6.1.</p> <p>Furthermore, <math>EG_y</math> was revised to <math>EG_{facility,y}</math> in section B.6.1, B.6.3 and B.7.1</p>	<p>OK.</p> <p>It has been revised in the PDD.</p> <p>The CAR is therefore closed.</p>
<p>CAR5 Please refer to Page 17, Section B.6.1 of the PDD, "Step 1. Identify the relevant electricity systems", there is no electricity exchange between NWPG and NCPG, while the NWPG exports electricity to Central China Power Grid (CCPG) according to the China DNA's Guideline on OM calculation published in July 2009.</p>	<p>5.5.1 5.5.2</p>	<p>It was confirmed that NWPG is connected to CCPG, not NCPG. Accordingly, PDD was revised.</p>	<p>OK.</p> <p>It has been revised in the PDD.</p> <p>The CAR is therefore closed.</p>
<p>CAR6 Please refer to PDD Section B.6.2, the data sources shall be precisely described.</p>	<p>5.5.3 8.1 8.3</p>	<p>The GSP of the Project was started on 28/09/2010. At the time of the GSP, following data were available to calculate the grid emission factor.</p> <ul style="list-style-type: none"> <li>• NDRC published grid emission data 2009 (published on 02/07/2009)</li> <li>• Electric Power Yearbook 2009 (published in Dec. 2009) and Energy Statistic Yearbook 2009 (published on June 2009).</li> </ul> <p>Furthermore, following document was published after the GSP.</p> <ul style="list-style-type: none"> <li>• NDRC published grid emission data 2010</li> </ul>	<p>OK.</p> <p>The OM&amp;BM calculation in the PDD has been updated by applying the latest information from the Electric Power Yearbook 2009 and Energy Statistic Yearbook 2009 at the time of GSP. Although the China DNA's data on 20/12/2010 is after the GSP, the validation team deems it conservative to apply the OM and BM data in line with the China DNA's notification on 20/12/2010. The data source of each parameter listed in Section B.6.2 has been updated according to the China DNA's notification on 20/12/2010 and checked to be consistent.</p>

		<p>(published on 20/12/2010)</p> <p>Based on above data, three different grid emission factors were considered.</p> <p>Case 1: Using the NDRC published grid emission data 2009 (this was the case applied for the PDD in GSP)</p> <p>Case 2: Using the NDRC published grid emission data 2009 as the base, update the data using Electric Power Yearbook 2009 and Energy Statistic Yearbook 2009, which were available at the time of GSP.</p> <p>Case 3: Using the NDRC published grid emission data 2010</p> <p>From the calculation, it was found that case 3 has the lowest emission factor, therefore, case 3 was selected as a conservativeness approach.</p> <p>Accordingly, values, data source of parameters listed in the B.6.1, B.6.2, B.6.3 and annex 3 were changed.</p> <p><math>EF_{CO_2,i}</math> in section B.6.2 was revised based on the IPCC.</p> <p>CM calculation excel file was also updated.</p> <p>Finally, most advanced efficiency of each fuel type was revised in accordance with the NDRC published grid emission data 2010, in section B.6.2, while a table of</p>	<p>The CAR is therefore closed.</p>
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		these values was added in the section B.6.1.	
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CAR7 Please refer to PDD Section B.7.1, the electricity watt-hour meter shall be revised as electricity meter. The source of data shall be revised as "project activity site".	5.5.4 8.4	<p>The PDD was revised by deleting "watt-hour", while revising wording "electronic" to "electricity". In addition, source of the data was revised to "Project activity site"</p> <p>Wording in the B.7.1 was revised.</p>	<p>OK.</p> <p>It has been revised in the PDD. The CAR is therefore closed.</p>
CAR8 The procedures for day-to-day records handling shall be identified in the PDD Section B.7.2.	8.12	<p>The PDD section B.7.2 was revised to include monitoring procedure and monitoring structure.</p> <p>Figure B.7-1 was moved. In addition, B.7.2 was revised to include more detailed information about the monitoring meters.</p>	<p>OK.</p> <p>It has been revised in the PDD. The CAR is therefore closed.</p>
CL1 The technical lifetime of the wind turbine generator should be provided in the Table A.4-1. The technical specification of the generator should also be provided.	4.1	<p>According to the turbine contract, technical lifetime of the turbine is 20 years. Accordingly, Section A.4.3 was revised by adding "Technical lifetime of the FS82A-1500/11 is 20 years". In addition, table A.4.1 was revised to include specification of generator while revised name of key components. Finally, operation lifetime was also revised to 20 years for IRR calculation and section C.2.1.1 accordingly. For more details, please refer to CL5.</p>	<p>OK.</p> <p>It has been revised in the PDD in line with the technical specifications in the wind turbine purchase contract. The operational lifetime is revised as 20 years in line with the technical lifetime of the wind turbine generator. The CL is therefore closed.</p>

CL2 The electricity connection system should be described on how the electricity is exported to the Northwest China Power Grid in Section A.4.3 of the PDD.	4.1	The generated electricity by the Project will be exported to the local Yumen town grid via a newly built 35kV/330kV transformer station, which is then exported to the NWPG. Accordingly the explanation was added to section A.4.3 of the PDD.	OK. It has been revised in the PDD. The CL is therefore closed.
CL3 The PDD quoted the China DNA's reference data of the OM&BM emission factors published on 2 <sup>nd</sup> July 2009. However, the PDD was published for global stakeholder consultation in September 2010, which is 1 year later. Therefore, it should be clarified whether the China DNA's reference data of 2 <sup>nd</sup> July 2009 are the most recent data available at the time of submission of the CDM-PDD to the DOE for validation.	5.5.1 5.5.2	As explained in the CAR 6, various grid emission factors were considered. For the PDD, NDRC published grid emission data 2010 was applied.  Furthermore, annex 3 was revised inline with the NDRC published grid emission data 2010.	OK. The information in the Electric Power Yearbook 2009 and Energy Statistic Yearbook 2009 reflecting the latest information at the time of GSP has been used in the revised PDD. Although the China DNA's data on 20/12/2010 is after the GSP, the validation team deems it conservative to apply the OM and BM data in line with the China DNA's notification on 20/12/2010. The PDD annex 3 has also been updated according to China DNA's data on 20/12/2010. The CL is therefore closed.
CL4 Please refer to the IRR worksheet, the cash inflow and outflow should be clearly presented. The emission reduction calculation spreadsheets should be submitted in separate documents, which are clearer for understanding.	7.3.1 7.3.6 7.3.7	IRR worksheet was revised accordingly. In addition, emission factor calculation was provided as a separate worksheet.	OK. The cash inflow and outflow has been clearly presented. The emission reductions spreadsheets have been separately provided. The CL is therefore closed.
CL5 It should be clarified how the project assessment period was selected. From the IRR calculation worksheet, the electricity sale revenues have been	7.3.1 7.3.6 7.3.7	Although the FSR assumed 23 years of operation, the technical lifetime is 20 years, according to the	OK. The validation team has reviewed the wind turbine purchase contract and



<p>considered from the Year 3 to Year 25, where totally 22 years operation has been included. However, it was confirmed that the technical lifetime of the wind turbine generators are 20 years according to the wind turbine contracts. Further, it is observed that the annual electricity outputs in the Year 3, Year 24 and Year 25 are relevant lower than the Year 4 to Year 23. Please clarify it.</p>	<p>turbine contract. Therefore, IRR and PDD were revised with an assumption that each turbine will operate only 20 years. With this reason, deleted year 24<sup>th</sup> and 25<sup>th</sup> in the IRR calculation sheet and assumed that operation ends in 12<sup>th</sup> month of year 23 (which is 20 years after start of phase 2 operations).</p> <p>For the year 3 and 23 annual power generation is lower, due to following reasons.</p> <p>Year 3: Construction will be completed in two phases. FSR estimates that phase one (100.5 MW) will be completed and starts power generation in the 5<sup>th</sup> month of the year 3. Phase 2 is estimated to complete and starts power generation from 1<sup>st</sup> month of the year 4. Therefore, in year 3,</p> <p>(1) Operating capacity is 100.5 MW, a half of the project capacity</p> <p>(2) Actual operation is only 8 months (1,538.02 h)</p> <p>(3) Therefore, the total generation is 154,571 MWh (100.5 MW x 1,538.02h)</p> <p>(4) Operating hour based on 201 MW, the project capacity, is only 769 h/year (154,571MWh/ 201MW), which is significantly lower than rest of the project (2,307 h/year)</p>	<p>confirmed that the wind turbine design lifetime is 20 years. The expected operational lifetime in the IRR spreadsheets has been revised to be consistent with the technical lifetime of the wind turbine generators. The investment assessment period is finally selected as 23 years including 3 year of construction period. The electricity output for year 24 and 25 was deleted from the IRR spreadsheets. The operating hour in year 23 is revised as 1538 hours. In summary, 20-year full operational period has been considered for investment analysis, which is in line with the paragraph 3 <i>Guidance on the Assessment of Investment Analysis</i> version 03.1/8/. The CL is therefore closed.</p>
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		<p>The estimated schedule of year 3 is inline with the actual situation. Since key actions related to the Project implementation were started in 2009, 2009 is considered as the year 1. As of end of Feb. 2011 (i.e., end of 2<sup>nd</sup> month of year 3), the phase I is undergoing testing before generating electricity at a full-scale. On the other hand, phase 2 is still under the construction. Therefore, the estimated schedule of construction and year 3 is close to the actual situation.</p> <p>Year 23: As shown above, phase 1 come to operation in year 3 (5<sup>th</sup> month of year 3 to be exact). Therefore, phase 1 turbines will get to end of the technical lifetime in 4<sup>th</sup> month of year 23, whereas, phase 2 will continue to operate until end of year 23. Therefore, in year 23,</p> <p>(1) Operating capacity is 201 MW between 1<sup>st</sup> to 4<sup>th</sup> month of year 23. However, from 5<sup>th</sup> month to 12<sup>th</sup> month, the operating capacity is only 100.5 MW.</p> <p>(3) Therefore, the total generation is 309,142 MWh (201 MW x 769.01 h+100.5MW x 1,538.02 h)</p> <p>(4) Operating hour based on 201 MW, the project capacity, is 1,538.02 h/year (309,142 MWh/</p>	
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		201MW), which is significantly lower than rest of the project (2,307 h/year)	
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<p>CL6 It should be transparently presented in the IRR spreadsheets on 1) how the depreciation cost and interest cost (or loan repayment) is calculated; 2) how the VAT cost and VAT surtax (i.e. urban construction and maintenance tax, education levy) is calculated.</p>	<p>7.3.1 7.3.6 7.3.7</p>	<p>IRR calculation was completely revised, including</p> <ol style="list-style-type: none"> <li>1) Listed assumptions applied, and clearly demonstrated how the depreciation and interest cost were calculated</li> <li>2) Listed assumption of VAT, (including VAT surcharge taxes, VAT drawback etc.) and clearly indicated how each values were calculated.</li> </ol>	<p>OK.</p> <p>The calculation of depreciation cost, interest cost, VAT and VAT surtax has been transparently presented in line with the FSR.</p> <p>The CL is therefore closed.</p>
<p>CL7 The evidence for selection of the tariff post 30,000 hours should be provided (i.e. <i>Power Engineering Economic Evaluation and Tariff</i>). Moreover, it should be clarified how the two-stage tariff scenario (i.e. before and after 30,000h) has been determined as applicable to this proposed project prior to the investment decision.</p>	<p>7.3.7</p>	<p>According to the FaGaiNengYuan [2008] No.1135, which was issued on May 16<sup>th</sup>, 2008, this Project should be constructed and managed following the rules and tariff of the Yumen Changma wind power concession project. And the Yumen Changma Wind power concession project has a two-stage tariff scenario, according to NDRC approval (FaGaiNengYuan[2008] No.1508). Therefore, use of the two-stage tariff scenario for the Project is a reasonable assumption.</p> <p>According to the Power Engineering Economic Evaluation and Tariff (a copy was provided to DOE) the 2008 yard stick tariff for coal thermal power plants in Gansu is 0.2765 RMB/kwh.</p>	<p>OK.</p> <p>The electricity tariff in the PDD was estimated as 0.5206 RMB/kWh incl. VAT for the first 30,000 operational hours and local average beyond, which was the concession wind tariff approved by NDRC as indicated in FaGaiNengYuan[2008]1135/34/ and FaGaiNengYuan[2009]1005/32/. It is validated that the FaGaiNengYuan[2008]1135/34/ was issued on 16 May 2008 which was prior to the investment decision by the project owner on 15<sup>th</sup> April 2009. As per FaGaiNengYuan[2008]1135/34/, the proposed project should be constructed as a concession windfarm project and the tariff should be executed as concession tariff. Soon after issuance of FaGaiNengYuan[2008]1135/34/, the NDRC approved the concession tariff as 0.5206 RMB/kWh incl. VAT for the</p>

		<p>On the other hand, an average tariff of Hydro was 0.217 RMB/kWh, according to a study of data available in registered CDM projects (also evidence was provided to DOE).</p> <p>Since coal thermal power plants and hydro power plants covers over 98% of power supply of the grid, 0.42 RMB/kw is considered conservative estimation for a province average tariff.</p> <p>Accordingly, the PDD section B.5 was revised</p>	<p>first 30,000 operational hours and local average beyond for Yumen Changma Concession Windfarm Project on 16 June 2008. On 21 April 2009, the tariff of the Project was finally approved by NDRC by issuing FaGaiNengYuan[2009]1005/32/.</p> <p>The Power Engineering Economic Evaluation and Tariff has been provided and it was confirmed that the yard-stick tariff for coal thermal power plants in Gansu Province is 0.2765 RMB/kwh. Further, the validation team has reviewed the <i>2009 Electricity Price and Accounting Monitoring Report/51/</i> by State Electricity Regulatory Commission and confirmed that the local average tariff of Gansu Province in 2009 is 0.25118 RMB/kWh incl. VAT. It is thus deemed conservative that the project owner applied the 0.42 RMB/kWh incl. VAT as the average tariff beyond at the time of investment decision (i.e. 15 April 2009). Therefore, the validation team confirms the electricity tariff has been consistently and appropriately determined in the PDD. The CL is therefore closed.</p>
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<p>CL8 It should be clarified on what variations of the selected financial indicators (i.e. static investment, annual O&amp;M cost, net grid-connected electricity and tariff) the project IRR reach benchmark and why such conditions are unlikely to happen.</p>	7.3.9	<p>IRR worksheet was revised and results were given in the sub-step 2b. sensitivity analysis of section B.5.</p>	<p>OK. The critical analysis has been conducted in the revised IRR spreadsheet. The validation details have been demonstrated in Section 3.5.3.4 of this report. The CL is therefore closed.</p>
<p>CL9 Please refer to PDD Page 14, Step 4, it should be clearly described what data source has been selected for identification of similar projects and clarify whether the data source is reliable and appropriate.</p>	7.5.4 7.5.5	<p>Data for common practice was taken from database of UNFCCC website and Statistics of Windpark Installed Capacities in China of 2007, Chinese Wind Energy Association (<a href="http://www.cwea.org.cn/upload/20080324.pdf">http://www.cwea.org.cn/upload/20080324.pdf</a>). Statistics of Windpark Installed Capacities in China of 2007 is considered reliable, as it was developed by a reliable third party, and is one of the most commonly used references on wind project list in China.</p>	<p>OK. The similar projects were selected in the PDD according to the <i>China Windfarm Installed Capacity Statistics in 2007</i> published by China Wind Energy Association on February 28<sup>th</sup> 2008, which include statistical information of windfarm projects in China and represent local industry expertise from official sources in accordance with VVM paragraph 119 (b). The <i>China Windfarm Installed Capacity Statistics in 2007</i> has been widely used as the basic sources for common practice of other registered CDM windfarm projects in China. The UNFCCC database has also been used for identification of similar windfarm projects. Furthermore, a list of windfarm projects in Gansu Province has been provided in Annex 5 of the PDD. The CL is therefore closed.</p>

CL10 The supporting evidence (e.g. one-line diagram or power purchase agreement) should be provided for identification of the monitoring electricity meters.	8.2 8.5	A diagram (One-line diagram for changma 3.pdf) attached shows project's connectivity to the NWPG and location of the meters.	OK. The one-line diagram has been provided and it was confirmed that both the main meter and backup meter will be installed at the Changma West 330kV substation. The CL is therefore closed.
CL11 According to the PDD Section B.7.1, the electricity meters will be calibrated annually. However, during onsite interview with the project owner, the electricity meters will be calibrated every 3 months. Therefore, please confirm the calibration frequency.	8.11	The exact frequency is yet to be finalized. However, calibration will be conducted at least once a year. Accordingly, PDD was revised.	OK. The calibration frequency is revised as once a year at least in the PDD. The CL is therefore closed.
CL12 Please refer to PDD Section B.7.2, Page 30, Figure B.7-1, the operational and management structure of the monitoring plan is not clear enough. The authority and responsibility of monitoring staff should be clearly described.	8.13 8.16	The figure B.7-1 was revised to include more detailed structure of the monitoring team and task of each department.  Figure B.7-1 was moved.	OK. It has been revised in PDD Section B.7.2. The CL is therefore closed.
CL13 Please refer to PDD Section B.7.2, the data management, quality assurance and quality control procedures should be sufficiently described as part of monitoring plan to ensure that the emission reductions achieved by the project activity can be reported ex post and verified.	8.14	Section B.7.2 was revised to include data management and quality control measures.  Section B.7.2 was revised and added QA/QC descriptions.	OK. It has been revised in PDD Section B.7.2. The CL is therefore closed.

<p>CL14 It was observed in the IRR spreadsheet that the “known highest” and “8% IRR” are included. Therefore, the PP should explain the calculation process of these two worksheets during sensitivity analysis in the Section B.5 of the PDD. In particular, the highest applicable tariff for the proposed project should be justified according to the EB 54 paragraph 53. Further, necessary explanations should also be provided in the IRR spreadsheets.</p>	7.3.6	Explanation was further enhanced in the PDD, while newly added explanations to IRR calculation sheet.	<p>OK.</p> <p>Necessary descriptions on how the “known highest” and “8% IRR” is calculated have been provided in the revised PDD. according to <i>Information Note on The Highest Tariffs Applied By The Executive Board In Its Decisions On Registration of Projects in The People’s Republic of China/54/</i> issued in EB54 Para 53, the highest applicable wind tariff in Gansu Province applied by Executive Board is 0.585 RMB/kWh incl. VAT. The validation team has inputted the highest applicable tariff in the IRR worksheet for the first 30,000 hours, the project IRR would be 6.71% after tax, which is below the benchmark. Even if the 0.585 RMB/kWh is applied for the whole operational period, the project IRR would be 7.48% (after tax), which is still below the benchmark IRR 8%.</p> <p>The CL is therefore closed.</p>
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<p>CL15 The VAT calculation should be conducted in accordance with the “<i>Notification on VAT Policy for the Resources Comprehensive Utilization and Other Products</i>” and “<i>Provisional VAT Tax Law</i>”, which was referenced in the Page 14-2 and Table 14.3 of the approved FSR.</p>	<p>7.3.6</p>	<p>According to “<i>Notification on VAT Policy for the Resources Comprehensive Utilization and Other Products</i>” and “<i>Provisional VAT Tax Law</i>”, VAT on wind projects receives levy drawback of 50%, which became effective on 1/07/2008, before starting date of the Project. Accordingly, VAT calculation was revised and additional assumptions on VAT were added to the PDD.</p> <p>Moreover, IRR calculation was revised to include floating capital and residue value.</p>	<p>OK.</p> <p>The VAT deductible for equipment purchase and VAT drawback has been considered in the revised IRR spreadsheet in line with FSR Page 14-2 and Table 14.3. The PDD has also been updated. Further, the floating capital and residue value has been included in the IRR spreadsheets in line with the FSR. The project IRR was updated to 5.62% after tax, which is far below the selected benchmark.</p> <p>The CL is therefore closed.</p>
<p>CL16 It should be clarified how the residue value rate and depreciation period has been determined in the IRR spreadsheets.</p>	<p>7.3.6</p>	<p>The FSR assumed the following for depreciation and residual values. Depreciation rate: 6.5% Depreciation period: 16 years Residual value: 0 (zero) Yuan</p> <p>Although the FSR assumes no residual value at end of the Project, it is not very realistic. Therefore, to be more realistic, 5% of total investment was considered as the residual value at end of the operation.</p> <p>Accordingly, depreciation period and rate were also changed in a way that the Project will depreciate</p>	<p>OK.</p> <p>The residue value is selected as 0% in the FSR, which is not conservative and realistic based on local accounting regulation. The residue value rate was selected as 5% of the fixed asset value in the IRR spreadsheets, which is confirmed reasonable compared with other registered windfarm projects in Gansu Province (i.e. with range of 3%~5% for residue value rate). The fair value has also been included as cash inflow at the final year. Therefore, the validation team confirms the fair value has been appropriately calculated in line with the paragraph 4 of the <i>Guidelines on Assessment of</i></p>

		<p>95% of the total investment at a constant rate, between year 3 and year 23. Key parameters of the revised depreciation and residual values are shown below.</p> <p>Depreciation rate: 4.75% Depreciation period: 20 years Residual value: 10,225 x 10,000Yuan</p>	<p><i>Investment analysis version 3.1/8/.</i></p> <p>The depreciation period is selected as 20 years and the annual depreciation rate is calculated as 4.75% (i.e. <math>(1-5\%)/20=4.75\%</math>). The selected depreciation period (i.e. 20 years) is confirmed reasonable for wind power generating facilities since the <i>Implementation Rules for Law of the People's Republic of China on Enterprise Income Tax/25/</i> stipulates a minimum 10-year depreciation period for manufacturing equipment. Therefore, the validation team confirms the depreciation has been appropriately calculated in line with paragraph 5 of the <i>Guidelines on Assessment of Investment analysis version 3.1/8/.</i></p> <p>The CL is therefore closed.</p>
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## **Appendix B**

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### **CERTIFICATES OF COMPETENCE**

## Qualification

Ma, Libo /

### Emission Trading

#### United Nations Framework Convention on Climate Change

Auditor No.:

(AuditorenRegNr)

Appointed:  
(Zugelassen)

☒ ja

Qualification Level: Auditor  
(Qualifikationsstufe)

External:  
(Externer)

☐ ja

Add. reviewer: ☐ yes  
(Zusätzlicher Prüfer)

EAC Scopes:  
(EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)

CDM 04 - Manufacturing industries

Add. qualification:  
(zus. Qualifikation)

First Appointment: 2009-06-01  
(Erstberufung)

Valid to: 2012-05-31  
(Gültig bis)

Remarks: CDM 01: valid for TA 1.1, 1.2  
CDM 04: valid for TA 4.5 - Other WHR and Fuel Switch

Languages: Chinese  
English

### Experience Exchange

Date

Location

Remarks

Accredita

### Monitoring

Latest Monitoring:  
(letzte Beurteilung)

Next  
Monitoring:  
(nächste  
Beurteilung)

Remarks:

[View / Edit Monitoring](#)

### History of scope allocation

Date: 2009-06-02

Change: EAC CDM added  
By: Manfred Brinkmann  
Reason:

## History

Created:	2008-03-20 15:44:05	Daxun Li/Bj/Chn/TUV
Modified:	2011-01-17 14:43:10 ZE9	Manfred Brinkmann/Jpn/TUV
	2011-01-17 14:42:56 ZE9	Manfred Brinkmann/Jpn/TUV
	2008-03-20 15:44:19	Daxun Li/Bj/Chn/TUV

## Qualification

Zhu, Jiang /

### Emission Trading

#### United Nations Framework Convention on Climate Change

Auditor No.:

(AuditorenRegNr)

Appointed:

(Zugelassen)

☒ ja

Qualification Level:

(Qualifikationsstufe)

Auditor

External:

(Externer)

☐ ja

Add. reviewer:

(Zusätzlicher Prüfer)

☐ yes

EAC Scopes:

(EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)

CDM 04 - Manufacturing industries

Add. qualification:

(zus. Qualifikation)

First Appointment:

(Erstberufung)

03/08/2009

Valid to:

(Gültig bis)

03/07/2012

Remarks:

CDM 01: valid for TA 1.1, 1.2

CDM 04: valid for TA 4.5 - Other WHR and Fuel Switch

Languages:

Chinese

English

### Experience Exchange

Date

Location

Remarks

Accreditation(s)

### Monitoring

Latest Monitoring:

(letzte Beurteilung)

Next Monitoring:

(nächste Beurteilung)

Remarks:

### History of scope allocation

Date: 2009-03-08  
Change: EAC CDM added  
By: Manfred Brinkmann  
Reason:

## History

Created:	03/20/2008 01:56:52 PM	Daxun Li/Bj/Chn/TUV
Modified:	01/13/2011 03:24:11 PM ZE9	Manfred Brinkmann/Jpn/TUV
	01/13/2011 03:22:23 PM ZE9	Manfred Brinkmann/Jpn/TUV
	11/10/2010 06:24:28 PM ZE9	Manfred Brinkmann/Jpn/TUV
	11/10/2010 06:23:35 PM ZE9	
	03/20/2008 01:57:07 PM	

## Qualification

Deng, Cuiping /

### Emission Trading

#### United Nations Framework Convention on Climate Change

Auditor No.:

(AuditorenRegNr)

Appointed:  
(Zugelassen)

☒ ja

Qualification Level:  
(Qualifikationsstufe)

External:  
(Externer)

☐ ja

Add. reviewer: ☒ yes  
(Zusätzlicher Prüfer)

EAC Scopes:  
(EAC Branchen)

CDM 01 - Energy industries (renewable - / non-renewable sources)  
CDM 05 - Chemical industry  
CDM 11 - Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride  
CDM 12 - Solvents use

Add. qualification:  
(zus. Qualifikation)

First Appointment: 2010-10-09  
(Erstberufung)

Valid to: 2013-10-08  
(Gültig bis)

Remarks:

Appointed as Technical Reviewer for  
TA 1.2  
TA 5.1, 11.1, 12.1

Languages:

### Experience Exchange

Date

Location

Remarks

Accredita

### Monitoring

Latest Monitoring:  
(letzte Beurteilung)

Next  
Monitoring:  
(nächste  
Beurteilung)

Remarks:

### History of scope allocation



Date: 2010-11-11  
Change: EAC CDM, CDM, CDM, CDM added  
By: Manfred Brinkmann  
Reason: Appointed as Technical Reviewer for  
TA 1.2  
TA 5.1, 11.1, 12.1

## History

Created:	2010-08-13 11:19:43	Cuiping Deng/Bj/Chn/TUV
Modified:	2010-11-11 12:00:44 ZE9	Manfred Brinkmann/Jpn/TUV
	2010-11-11 11:59:20 ZE9	Manfred Brinkmann/Jpn/TUV
	2010-11-11 11:58:18 ZE9	Manfred Brinkmann/Jpn/TUV
	2010-08-13 11:21:37	Cuiping Deng/Bj/Chn/TUV