



VALIDATION REPORT

for the CDM Project Activity

CECEP Gansu Yumen Changma Daba North Wind Farm Project

in

P.R.China

Report No. 01 997 9105067508

Version No. 03, 2012-06-21

TÜV Rheinland (China) Ltd.

I. Project description:

Project title:	CECEP Gansu Yumen Changma Daba North Wind Farm Project
Host Country:	People's Republic of China (P.R.China)
Methodology:	ACM0002 (Version 12.2.0) ☒ Large Scale ☐ Small Scale
Annual average emission reductions (estimate):	90,531 tCO ₂ e/yr

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

Party	Project Participants	Party considered a project participant
P.R.China(Host)	CECEP Wind Power (Gansu) Co., Ltd	No
United Kingdom of Great Britain and Northern Ireland	Shell Trading International Limited	No

II. Validation:

Contract party: CECEP Wind Power (Gansu) Co.,Ltd

Validation Team:

Validation Team			Role									
Full name	Affiliation TÜV Rheinland	Appointed for Sectoral Scopes (Technical Areas)	Team leader	Acting Team Leader	Local Expert	Team Member (Auditor)	Technical Expert	Acting Tech. Expert	Trainee Auditor	Technical Reviewer	Expert to TR	Trainee TR
Mr. MA Libo	China	1.1, 1.2, 4.5	X		X							
Ms. WANG Guolian	China	1.2, 5.1, 11.1, 12.1			X	X						
Ms. DENG Cuiping	China	1.2,4.1,4.5,5.1,8.2,10.2,11.1,12.1								X		

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 9105067508	Version number: 03	Date of this version: 2012-06-21	Date of first issue: 2012-01-13
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Final Approval:	Released on:	Designated Operational Entity (DOE):
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☒	Date: 2012-07-03 By: Mr. Praveen N Urs	TÜV Rheinland (China) Ltd. TÜV Rheinland (China) Ltd., Unit 707, AVIC Building, No.10B, Central Road, East 3rd Ring Road, Chaoyang District, Beijing 100022, People's Republic of China Tel.: +86 10 65 66 66 60 (ext.169), Fax: +86 10 65 66 66 67 E-mail: ghg-doe@bj.chn.tuv.com
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Abbreviations

BM	Build Margin
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reduction
CL	Clarification Request
CM	Combined Margin
CO ₂	Carbon Dioxide
DNA	Designated National Authority
DOE	Designated Operational Entity
DR	Document Review
EB	Executive Board
EIA	Environmental Impact Assessment
ER	Emission Reduction
ERPA	Emission Reduction Purchase Agreement
FSR	Feasibility Study Report
GHG	Greenhouse Gas
GSC	Global Stakeholder Consultation
I	Interview
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
kW	Kilo Watt
kWh	Kilo Watt Hours
LoA	Letter of Approval
MoV	Means of Verification
NDRC	National Development and Reform Commission
NGO	Non Government Organisation
OM	Operating Margin
OSV	On Site Visit
PDD	Project Design Document
t	Tonne
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value Added Tax

Executive Summary – Validation Opinion

The Validation Team assigned by the DOE - TÜV Rheinland (China) Ltd. has performed a validation of the 'CECEP Gansu Yumen Changma Daba North 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 review of the project design documentation and the subsequent follow-up interviews have provided DOE with sufficient evidence to determine the fulfillment of stated criteria.

The Validation has been executed in the following steps:

- Desk review of preliminary PDD (Version 01, 18 November 2011)
- Public stakeholder comment process (3 December 2011 to 1 January 2012)
- On-site visit with stakeholder interviews (4 January 2012 to 6 January 2012)
- Issue of checklist with corrective action requests (CARs) and clarification requests (CLs) and the draft validation report & protocol
- Desk review of revised PDD (Version 03, 4 June 2012)
- Review of proposed correction and clarifications
- Issue of the final validation report & protocol

The project activity is bilateral CDM project. The host country of the proposed project is P.R.China and the Annex I country is United Kingdom of Great Britain and Northern Ireland. Both countries fulfill the participation criteria.

The LoA from DNA of China has been received, which confirmed that the project assists in achieving sustainable development and authorized CECEP Wind Power (Gansu) Co., Ltd as the Chinese participant.

The LoA from United Kingdom of Great Britain and Northern Ireland is received.

The project applies approved baseline and monitoring methodology ACM0002 Version 12.2.0- *"Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources"*, *"Tool for the demonstration and assessment of additionality"*, Version 6.0.0 and *"Tool to calculate the emission factor for an electricity system"*, Version 02.2.1.

By utilizing renewable wind power resources, the project results in CO₂ emission reductions that are real, measureable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The total emission reductions from the project are estimated to be on the average 90,531 tCO₂e/yr over the first 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 training arrangement has been in place and checked by the Validation Team. It can be confirmed that the monitoring staff will receive the sufficient training to ensure the appropriate operation and maintenance.

In summary, it is Validation Team's opinion that the CECEP Gansu Yumen Changma Daba North Wind Farm Project in P.R.China as described in the PDD of Version 03, 4 June 2012 meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria as well as the baseline and monitoring methodology. TÜV Rheinland thus requests the registration of the Project as a CDM project activity.

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1 INTRODUCTION

CECEP Wind Power (Gansu) Co.,Ltd has commissioned the DOE TÜV Rheinland (China) Ltd. to perform a validation of the 'CECEP Gansu Yumen Changma Daba North Wind Farm Project' (hereafter called 'the Project') in Yumen Town, Gansu Province, People's Republic of China. 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" refer 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 criteria stated in Article 12 of the Kyoto Protocol, the CDM modalities and procedures as agreed in the Marrakech Accords and the relevant decisions by the CDM Executive Board, including the approved baseline and monitoring methodology, ACM0002 Version 12.2.0. The Validation Team has, based on recommendations in the latest available version of Validation and Verification Manual (VVM) during validation process, using objective evidence, assess the completeness and accuracy of the claims and conservativeness of the assumptions made in the project design document (PDD) , to ensure that, in accordance with VVM and CDM requirements, the rules-based mechanism of CDM are complied with.

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 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/ Gold China Consultancy International, Project Design Document for the CECEP Gansu Yumen Changma Daba North Wind Farm Project, Version 01, 18 November 2011
- /2/ Gold China Consultancy International, Project Design Document for the CECEP Gansu Yumen Changma Daba North Wind Farm Project, Version 03, 4 June 2012.
- /3/ National Development and Reform Commission of the People's Republic of China: Letter of Approval original English version (Ref no.:3624), February 2012.
- /4/ Annex I party: Letter of Approval (Ref. no.:EA/STIL/12/2012), 29 May 2012.
- /5/ Modalities of Communication Form (MoC), 23 November 2011.
- /6/ CDM Executive Board: Approved consolidated baseline and monitoring methodology, ACM0002., "*Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources*", , Version 12.2.0
- /7/ CDM Executive Board, Tool for the demonstration and assessment of additionality, Version 6.0.0
- /8/ CDM Executive Board: Project Design Document Form (CDM -PDD), Version 03, 28 July 2006
- /9/ CDM Executive Board: Guidelines for Completing the Project Design Document (CDM-PDD) and the Proposed New Baseline and Monitoring Methodologies (CDM-NM), Version 07, EB41 Annex 12, 02 August 2008
- /10/ CDM Executive Board: Clean Development Mechanism Validation and Verification Manual, Version 01.2
- /11/ CDM Executive Board: Guidelines on the assessment of investment analysis, Version 05, EB 62 Annex 5, 15 July 2011

- /12/ CDM Executive Board: Guidelines on the demonstration and assessment of prior consideration of the CDM, Version 04, EB 62 Annex 13, 15 July 2011
- /13/ CDM Executive Board: Glossary of CDM Terms, Version 05
- /14/ CDM Executive Board: Tool to calculate the emission factor for an electricity system, Version 02.2.1
- /15/ 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 02, dated 3 June 2011.
- /16/ CDM Executive Board: Guidelines for the reporting and validation of plant load factors, Version 1, adopted EB48 Annex 11.
- /17/ Shi Pengfei, *China Wind Farms Capacity Statistics in 2007*:
<http://www.cwea.org.cn/upload/20080324.pdf>
Shi Pengfei, *China Wind Farms Capacity Statistics in 2008*:
<http://www.cwea.org.cn/upload/20090305.pdf>
Chinese Wind Energy Association, *China Wind Farms Capacity Statistics in 2009*:
<http://www.cwea.org.cn/upload/201006102.pdf>
Chinese Wind Energy Association, *China Wind Farms Capacity Statistics in 2010*:
http://www.cwea.org.cn/download/display_info.asp?id=39
- /18/ Gold China Consultancy International: Project IRR Calculation Spreadsheet
- /19/ Gold China Consultancy International: Project ER Calculation Spreadsheet
- /20/ Local Stakeholder Survey Records for CECEP Gansu Yumen Changma Daba North Wind Farm Project, 4 August 2011
- /21/ National Development and Reform Commission of P.R.China, *Notification on Determining Baseline Emission Factor of China's Grid*, 20 October 2011
- /22/ Compilation Committee of China Electric Power Yearbook: China Electric Power Yearbook, 2006~2010
- /23/ National Statistics Bureau and Energy Bureau of NDRC: China Energy Statistical Yearbook, 2008~2010
- /24/ IPCC: *2006 IPCC Guidelines for National Greenhouse Gas Inventories Reference Manual*, 2006
- /25/ People's Republic of China: *The Law of the People's Republic of China on Enterprise Income Tax [2007]* No.63, issued on 16 March 2007 and effective from 1 January 2008
http://www.gov.cn/ziliao/flfg/2007-03/19/content_554243.htm
- /26/ State Council: *Implementation Rules for Law of the People's Republic of China on Enterprise Income Tax*, State Council Order No. 512, issued on 6 December 2007 and effective from 1 January 2008
http://www.gov.cn/zwgk/2007-12/11/content_830645.htm

- /27/ State Council: Provisional Regulations of the People's Republic of China on Urban Maintenance and Construction Tax, dated 08 February 1985
http://www.gov.cn/banshi/2005-08/19/content_24817.htm
- /28/ State Council: Revision of Provisional Regulations on Educational Surtax, No.448, issued on 20 August 2005 and effective on 1 October 2005
http://www.gov.cn/gongbao/content/2005/content_91662.htm
- /29/ Ministry of Finance People's Republic of China: Notice on the Unification of Local Educational Surtax Related Issues, *Caizong*[2010] No. 98, 7 November 2010
http://zhs.mof.gov.cn/zhengwuxinxi/zhengcefabu/201011/t20101116_349016.html
- /30/ People's Governmental Office of Gansu Province: Transmission of Notice on Management Measures of Gansu Provincial Local Educational Surtax Levy and Usage, 19 May 2010
<http://china.findlaw.cn/fagui/xz/18/228101.html>
- /31/ State Council: *Provisional Regulations of the People's Republic of China on Value Added Tax*, State Council No.538, issued on 10 November 2008 and effective on 1 January 2009
http://www.gov.cn/zwgk/2008-11/14/content_1149516.htm
- /32/ Ministry of Finance & State Administration of Taxation: *Notice of the Ministry of Finance and the State Administration of Taxation about policies regarding the value added tax on comprehensive utilization of resources and other products*, No.156 [2008], issued on 9 December 2008 and effective on 1 January 2009
<http://www.chinatax.gov.cn/n8136506/n8136593/n8137537/n8138502/8714515.html>
- /33/ Chinese National Development and Reform Commission, Approval on Busbar Tariff of Wind Power Projects,
fagaijiage [2008] 1876, 23 July 2008;
http://www.sdpc.gov.cn/jggj/zcfg/t20080813_230726.htm
fagaijiage [2009] 1906, 20 July 2009
http://jgs.ndrc.gov.cn/jggs/dljg/t20090727_292842.htm
- /34/ Technical Administrative Code of DL/T448-2000 Electric Energy Metering
- /35/ State Power Corporation of China: *Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects*, Beijing: China Electric Power Press, 2003
- /36/ Administration for Industry and Commerce of Gansu Province: Business Licence, 10 June 2010
- /37/ Xinjiang Research Institute of Investigation & Design of Water Conservancy & Hydropower: Feasibility Study Report for CECEP Gansu Yumen Changma Daba North Wind Farm Project, April 2011
- /38/ Development and Reform Commission of Gansu Province: Approval for the FSR of CECEP Gansu Yumen Changma Daba North Wind Farm Project (*ganfagainengyuan* [2011] No.1731), 15 October 2011

- /39/ Lanzhou Coal Mine Design and Research Institute, Environment Impact Assessment for CECEP Gansu Yumen Changma Daba North Wind Farm Project, January 2011
- /40/ Environment Protection Bureau of Gansu Province, Approval of EIA of CECEP Gansu Yumen Changma Daba North Wind Farm Project (*Ganhuanhan* [2011] No. 4), 17 February 2011
- /41/ CECEP Wind Power (Gansu) Co., Ltd: Layout of CECEP Gansu Yumen Changma Daba North Wind Farm Project
- /42/ Electric Power Company of Gansu Province (Gansu Grid Company): Preliminary opinion for the grid connection of CECEP Gansu Yumen Changma Daba North Wind Farm Project, 1 July 2011.
- /43/ CECEP Wind Power (Gansu) Co., Ltd: *Notification form to UNFCCC secretariat for prior consideration of CDM*, 27 October 2011
Confirmation of receipt by UNFCCC:
http://cdm.unfccc.int/Projects/PriorCDM/notifications/index_html
- /44/ CECEP Wind Power (Gansu) Co., Ltd: *CDM Notification to Chinese DNA*, 3 November 2011, confirmed by Chinese DNA on 3 November 2011
- /45/ Shell Trading International Limited and CECEP Wind Power (Gansu) Co., Ltd: Emission Reduction Purchase Agreement of the Proposed Project, 2 September 2011
- /46/ CECEP Wind Power (Gansu) Co., Ltd: Board Meeting Minutes on the CDM development for the proposed project, 15 July 2011
- /47/ Sinovel Wind Group Co., Ltd. and CECEP Wind Power (Gansu) Co., Ltd: Wind turbine units purchase contract, 20 October 2011
- /48/ Gansu Huamao Construction & Installation Engineering Co, Ltd and CECEP Wind Power (Gansu) Co., Ltd: Construction contract of wind turbine foundation, 25 October 2011
- /49/ Beijing Guoxuan Engineering Technology Co., Ltd. and CECEP Wind Power (Gansu) Co., Ltd: Approval on construction starting, 10 November 2011.
- /50/ CECEP Wind Power (Gansu) Co., Ltd and Xinjiang Research Institute of Investigation & Design of Water Conservancy & Hydropower: Contract of FSR, Investigation and Design, 20 October 2010
- /51/ CECEP Wind Power (Gansu) Co., Ltd, Installation contract of wind turbine units of CECEP Gansu Yumen Changma Daba North Wind Farm Project, December 2011
- /52/ CECEP Wind Power (Gansu) Co., Ltd, Tower Purchase Contract, 28 December 2011
- /53/ CECEP Wind Power (Gansu) Co., Ltd, Main Transformer Purchase Contract, 13 January 2012
- /54/ CECEP Wind Power (Gansu) Co., Ltd, Installation contract of 35 kV transmission line of CECEP Gansu Yumen Changma Daba North Wind Farm Project, 3 February 2012

- /55/ CECEP Wind Power (Gansu) Co., Ltd, Box Transformer Purchase Contract, 15 February 2012
- /56/ CECEP Wind Power (Gansu) Co., Ltd, Design agreement of wind turbine foundation, February 2012
- /57/ CECEP Wind Power (Gansu) Co., Ltd, Construction contract of substation, 21 February 2012
- /58/ CECEP Wind Power (Gansu) Co., Ltd, Cable purchase contract, 27 February 2012
- /59/ CECEP Wind Power (Gansu) Co., Ltd, CDM Monitoring Management Manual, January 2012.
- /60/ Bank of China Gansu Province Branch, Loan Commitment Letter, 13 December 2012.
- /61/ Bank of China: RMB loan interest rate table, dated 20 October 2010
http://www.boc.cn/finadata/lilv/fd32/201012/t20101225_1247524.html
- /62/ Bank of China: RMB loan interest rate table, dated 7 July 2011
http://www.boc.cn/finadata/lilv/fd32/201107/t20110706_1444099.html
- /63/ China Power New Energy Development Company Limited: Report in Middle Phase of Year 2008, Gansu Wind Power Phase I was developed as a VCS project.
http://finance.thestandard.com.hk/upload/comp_report_item/00735/LTN20090130107_C.pdf
- /64/ CHEN Fucai, Financial Evaluation and Difficult Question Analysis and Bank Loan Project, June 2007.
- /65/ 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 of EB54, June 2010 and version 02 of EB61, 3 June 2011.
- /66/ CECEP Wind Power (Gansu) Co., Ltd, CDM Consulting Service Contract, 5 August 2011.
- /67/ CECEP Wind Power (Gansu) Co., Ltd and Shell Trading International Limited, CDM Emission Reduction Purchase Agreement, 2 September 2011.

2.2 Follow-up Interviews with Project Stakeholders

From 4 January 2012 to 6 January 2012, the Validation Team of TÜV Rheinland has performed personal interviews with representatives of the project owner and local authorities at Yumen Town, Gansu Province, People's Republic of China. The main topics of the interviews were:

- permits and approvals
- status of project implementation
- project training plan
- project site conditions and

- local stakeholder consultation process, and
- IRR and baseline emission calculation.

	Date	Name/Title	Organization	Topic
/i/	2012-1-5	- ZHAO Dongsheng/ Vice General Manager	CECEP Wind Power (Gansu) Co., Ltd	- Project implementation status - Project management structure
		- SHEN Hongshuai/ Project Operation Manager - YAO Xi/ Project Manager	CECEP Wind- Power Investment Co,Ltd (Parent company of project owner)	- Applied technology - Approval status by the host country - Sustainable development issues - Baseline scenarios in absence of the project - Project financing - Monitoring plan - Training plan - Environmental impacts - Stakeholder interview process - CDM incentive consideration
/ii/	2012-1-5	- ZHAO Min/ Director General	Energy Bureau of Yumen City	- Project financing - Contributions on sustainable development for local area - Project's connecting with the grid plan
/iii/	2012-1-5	- ZHANG Yusheng/ Officer	Environment Protection Bureau of Yumen City	- Project impacts on local environment - Project benefits on local environment
/iv/	2012-1-5	- SONG Meng/ Local Resident - ZHANG Dong/ Local Resident - MA Wenlong/ Local Resident	Yumen Town, Yumen City, Gansu Province, P.R.China	- Local stakeholder consulting events - Attitudes toward the project's implementation
/v/	2012-1-5	- ZHANG Shuwei/ Project Manager	Gold China Consultancy International	- Project monitoring - Project IRR Calculation/Addition ality analysis

				- Project ER Calculation - Project CDM consideration and CDM status securing
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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 the CECEP Gansu Yumen Changma Daba North Wind Farm Project in P.R.China is enclosed in Appendix A to this report.

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

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

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

Validation Protocol Table 1: Validation requirements				
Checklist Question	Reference	Means of verification (MoV)	Comment	Draft and/or Final Conclusion
The various UNFCCC requirements as specified in the VVM are linked to checklist questions the project should meet. The checklist is organised in different sections, following the logic of the VVM.	Gives reference to documents where the answer to the checklist question or item is found.	Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.	The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.	This is either acceptable based on evidence provided (OK), or a corrective action request (CAR) due to non-compliance with the checklist question (See below). A request for clarification (CL) is used when the validation team has identified a need for further clarification.

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

Table 3: List of forward action requests (FARs)			
FAR number	Reference	Summary of project owner response	Validation team conclusion
Forward action request (FAR) to be raised during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration.	Reference to the checklist question number in Table 2 where the CAR or CL is explained.	The responses given by the project participants during the communications with the validation team should be summarised in this section.	This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 2, under "Final Conclusion".

Figure 1 Validation protocol tables

2.4 Internal Quality Control

The final validation report underwent a 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

Validation Team			Type of Involvement						
Full name	Affiliation TÜV Rheinland	Appointed for Sectoral Scopes (Technical Areas)	Supervising the work	Desk review	Site Visit + Interview	Report and protocol Writing	Technicia Expert Input	Reporting Support	Technical Reviewer
Mr. MA Libo	China	1.1, 1.2, 4.5	X	X	X	X			
Ms. WANG Guolian	China	1.2, 5.1, 11.1, 12.1			X				
Ms. DENG Cuiping	China	1.2,4.1,4.5,5.1,8.2,10.2,11.1,12.1							X

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

The project is a bilateral one, with P.R.China as the host party and United Kingdom of Great Britain and Northern Ireland as the Annex I party. Both parties are a party to the Kyoto Protocol, which can be verified by referring to information on 'unfccc.int'. Host party has issued its Letter of Approval (LoA), to which the Validation Team got from the project participant directly. The LoA from DNA of China refers to the precise project activity title in the PDD. The authenticity of the letter of approval from host party has been validated by checking on Chinese DNA's website.

The LoA from United Kingdom of Great Britain and Northern Ireland, which authorizes the Shell Trading International Limited as project participant, has been received. The below table summarizes the validation for project participants and parties involved:

Project participants	<i>1. CECEP Wind Power (Gansu) Co., Ltd</i>	<i>2. Shell Trading International Limited</i>
Parties involved	<i>P.R.China</i>	<i>United Kingdom of Great Britain and Northern Ireland</i>
APPROVAL		
LoA received	Yes	Yes
Date of LoA	<i>02/2012 original English version</i>	<i>29/05/2012</i>
Reference to document	<i>Ref. No.: 3624</i>	<i>Ref. No.: EA/STIL/12/2012</i>
LoA received from	<i>PP</i>	<i>PP</i>
Validation of authenticity	<i>Confirmed through verifying the website of Clean Development Mechanism in China</i> <i>Source:</i> <i>http://cdm.ccchina.gov.cn/web/NewsInfo.asp?NewsId=</i>	No doubt was raised through comparison with LoA of UK DNA for registered CDM Projects available on UNFCCC website.

	<u>5900</u>	
Validity of LoA	<i>Valid</i>	Valid
PARTICIPATION		
Party is party to Kyoto Protocol	Yes	Yes
Voluntary participation	Yes	Yes
Diversion of official development aid towards host country	N/A	No
Project contribution to SD	<i>Yes. The LoA from Host Party confirms that the project assists in achieving sustainable development.</i>	N/A

ODA validation

It is claimed in section A.4.5 of the PDD /2/ that no public funding from Annex I countries is involved in this project activity. By verifying the FSR approval /38/, the Validation Team understood that the 80% of total investment would be loaned from the Chinese bank. Bank of China has issued the Loan Commitment Letter/60/ to the project owner on 13 December 2010, which has been verified by the Validation Team. The validation did not reveal any information that indicates the project can be seen as a diversion of official development assistance (ODA) funding towards China.

MoC Confirmation

The signed Modalities of Communications (MoC) /5/ of the Project has been received by the Validation Team and it was confirmed that the MoC was signed on 23 November 2011 according to the Modalities of Communication Form (F-CDM-MOC) Version 01.4 issued on 25 July 2011. The names and authorized signatory of the project participants indicated in the MoC are consistent with the ones indicated in the PDD (Version 03, 4 June 2012).

In conclusion, the DNA of each party involved has issued its approval and no doubts have been raised by the Validation Team. And the Validation Team confirms the PP's participation requirements have been fulfilled.

3.2 Project Design Document

The Project Design Document (PDD) Version 03, 4 June 2012 /2/ is based on the currently valid PDD template Project Design Document Form (CDM -PDD), Version 03/8/ and is completed in accordance with the applicable CDM requirements for completing PDDs /9/.

3.3 Project Description

The project description in the PDD has been validated by on site physical inspection, document review, including the FSR/37/, EIA /39/, etc. and on site stakeholder

interview, including project management representative /i/, local resident /iv/, and local officers /ii/ /iii/.

The project is located at Changma, southwest of Yumen Town, Gansu Province, People's Republic of China, which can be confirmed by the FSR and EIA /39/. The geographical coordinates of each wind turbine have been provided by PP and verified by the Validation Team. The scope of coordinates has been correctly stated in the PDD /2/, which is circled by the three corners of (E96.7597°, N40.0972°), (E96.8333°, N40.0972°), and (E96.7597°, N40.0578°)/ 38/, and the central coordinates of the proposed project are N40.0841° and E96.7843°.

The project involves the installation of 16 wind turbines each unit with the capacity of 3.0 MW, providing a total capacity of 48 MW. The Validation Team has confirmed that all the technical parameters of the wind turbines stated in the PDD /2/ are consistent with the ones sourced from wind turbine contract /47/. The wind turbines are produced by Sinovel Wind Group Co., Ltd. /47/, which is a developed domestic manufacturer. Hence, it is deemed that the technology applied to the project activity does not involve the technology transfer from Annex I Party. A single unit of capacity 3.0 MW adopted in the project activity is the leading type of wind turbine in China. Based on the sectoral expertise, the Validation Team confirms that the technology applied for the proposed project reflects current good practice in China.

After stepped up by equipped 35 kV box transformers, the electricity generated by each wind turbine will be transmitted to 35 kV/110 kV on-site substation through which the electricity will be stepped up once again. The electricity will be finally transmitted to NWPG through Yumen grid (local grid company), which has been confirmed by interview with the project owner and the document /42/ issued by grid company. According to the FSR, it is expected that the proposed project will supply the net electricity of appropriately 101,040 MWh per year to the NWPG. The annual operating hour is 2,105 hours and the plant load factor (PLF) was ex-ante determined as 24.03% on the basis of the FSR.

The training arrangement has been addressed in CDM Project Monitoring Management Manual/59/ and checked by the Validation Team. It can be confirmed that the monitoring staff will receive the sufficient training to ensure the appropriate operation and maintenance.

The project starting date is 20 October 2011 which is the signature date of wind turbine contract /47/. The expected operational lifetime of the project activity is 20 years according to the FSR. A renewable crediting period of 7 years is adopted by the PP. The starting date of crediting period is selected to be 1 November 2012 or the date of registration, whichever is later, by the PP.

<i>Starting date of project</i>	<i>Expected project operational lifetime</i>	<i>Crediting period</i>
20 October 2011, the date of	20 years, according to the FSR	A renewable

wind turbine contract signed /47/		crediting period of 7 years has been chosen for the project, starting from 1 November 2012 or the date of registration, whichever is later.
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Herewith, the Validation Team summarizes *major* changes between webhosted PDD and final version of PDD for submission as follows:

Subject	Webhosted PDD	Correction to webhosted PDD in the final PDD submission for registration with DOE assessment and reason of acceptance.
PDD (project title / participants involved/ project location /project technology etc)	The Project has geographical coordinates with east longitude of 96°45 '35" - 96°50 '00" and north latitude of 40°03 '28" - 40°05 '50	The Project has central geographical coordinates with N40.0841° and E96.7843°.in a region with the three corners of of (E96.7597°, N40.0972°), (E96.8333°, N40.0972°), and (E96.7597°, N40.0578°)/38/.
Methodologies and tools applied (scope and version numbers)	N/A	N/A
CER calculations (formula applied/ amount of emission reduction)	N/A	N/A
Additionality: (benchmark / input values/analysis type/project start date/IRR or NPV values etc)	The Project IRR without CER revenue is 6.39% after tax in the GSP PDD.	The Project IRR without CER revenue is revised as 6.51% after tax in the final version PDD which is revised as per the CARs&CLs in Table 2 of this report. The sensitivity analysis has also been updated.
Monitoring (parameters / frequency)	The monitoring frequency of the monitored parameters in PDD Sectioni B.7.1 was not mentioned.	The monitoring frequency is added in the final version PDD as addressed by CAR7.

Crediting period (type / start date)	N/A	N/A
Please refer to Appendix A of this report for details of each change between webhosted PDD and the final PDD for submission. The Validation Team has carried out the validation process based on the Webhosted PDD and raised CARs/CLs against the project by issuing the validation protocol. With the updated information and corrections done on final PDD, the PP has addressed all the CARs /CLs that were raised by the Validation Team. It is concluded that the Validation Team has reviewed the project in line with the VVM (version 01.2) and all the evidence, corrections, justifications and updating done on the final PDD with respect to CARs /CLs raised are accepted and closed by the Validation Team, issuing the positive validation opinion for project registration.		

TÜV Rheinland validation team considers the project description of the project contained in the PDD to be complete and accurate. The PDD complies with the relevant methodology, tools, forms and guidance at the time of PDD submission for registration.

3.4 Baseline and Monitoring Methodology

3.4.1 Applicability of the selected methodology to the project activity

Approved baseline and monitoring methodology ACM0002 Version 12.2.0 has been applied for the proposed project activity in the updated PDD (Version 03, 4 June 2012). It is confirmed by the Validation Team the methodology applied was valid until 2 March 2012 and the request for registration can be submitted before 2 November 2012.

The validation team determined the applicability of methodology ACM0002 Version 12.2.0 as follows:

Applicability criteria of the methodology	Criteria fulfilled	Determination by the validation team
This methodology is applicable to grid-connected renewable power generation project activities that (a) install a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity (greenfield plant); (b) involve a capacity addition; (c) involve a retrofit of (an) existing plant(s); or (d) involve a replacement of (an) existing plant(s).	☒ Yes ☐ No	The proposed project is a Greenfield wind power project at a site where no renewable power plant was operated prior to the implementation of the project activity. It has been confirmed by the FSR. The electricity produced by the project activity is proposed to be supplied to the NWPG /38/. Thus it satisfies scenario (a).
The methodology is applicable if the project activity is the installation, capacity addition, retrofit or replacement of a power plant/unit of one of the following types: hydro power plant/unit (either with a run-of-river reservoir or an	☒ Yes ☐ No	The project activity is the installation of a wind power plant.

Applicability criteria of the methodology	Criteria fulfilled	Determination by the validation team
accumulation reservoir), wind power plant/unit, geothermal power plant/unit, solar power plant/unit, wave power plant/unit or tidal power plant/unit.		
The methodology is not applicable to the following: - Project activities that involve switching from fossil fuels to renewable energy sources at the site of the project activity, since in this case the baseline may be the continued use of fossil fuels at the site; - Biomass fired power plants; - Hydro power plants that result in new reservoirs or in the increase in existing reservoirs where the power density of the power plant is less than 4 W/m².	☒ Yes ☐ No	The project is not a biomass fired power plant or hydro power plant. And it is confirmed there is no fuel switch involved in the project activity.

The assessment of the project's compliance with the applicability criteria of ACM0002 as documented in section B.2 of PDD. In the Validation Team's opinion, the applicability of methodology for the proposed project activity has been fully justified.

3.4.2 Project Boundary

The spatial extent of the project boundary is clearly defined as the site of project activity and the grid system boundaries include all power plants connected physically to the NWPG including Shaanxi, Gansu, Qinghai, Ningxia and Xinjiang power grid, to which the project is connected. This is in line with the delineation of grid boundaries as provided by the DNA of China /21/. Emission sources and gases included in the project boundary are:

Emissions	GHGs involved	Description
Baseline emissions	CO ₂	Emissions equivalent to the same quantity of electricity generated by the project activity, which would have been otherwise generated in the fossil fuel intense grid as reflected by the grid emission factor. The grid emission factor is determined ex-ante as a combined margin, consisting of combination of the operating margin (OM) and build margin (BM) of the NWPG.
Project emissions	<i>Not involved</i>	Project emission is regarded as zero as the project is a renewable energy (wind source) project.
Leakage	<i>Not involved</i>	There are no leakages that need to be considered by applying this methodology.

In summary, the project boundary was correctly identified in accordance with the methodology. All greenhouse gas emissions occurring within the proposed project activity boundary as a result of the implementation of the proposed CDM project activity have been appropriately addressed in the PDD.

The identified project boundary and selected sources of emissions are justified for the project activity. The validation of the project activity did not reveal other greenhouse gas emissions occurring within the proposed CDM project activity boundary as a result of the implementation of the proposed project activity which are expected to contribute more than 1% of the overall expected average annual emission reduction, with respect to the methodology applied.

3.4.3 Baseline Identification

As discussed in Section 3.4.1 of this report, the approved baseline and monitoring methodology ACM0002 is applicable for the proposed project.

The baseline scenario has been described in the ACM0002 that 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"*. As per para 105 of VVM 01.2 /10/, no alternatives need to be discussed since the baseline scenario has been prescribed clearly in the applied baseline methodology.

The grid emission factor of the NWPG is estimated as the combined margin (CM), which is the weighted average of the operating margin (OM) emission factor and the build margin (BM) emission factor.

Validation Criteria	Check	Validation Team's Comments
<i>The approved baseline methodology applicable to the project</i> - explicit criteria - implicit criteria (e.g. available scenarios, applicability of formulas for BE/PE/LE calculations)	☒ Yes ☐ No	<i>The approved baseline methodology ACM0002 is applicable to the project with explicit criteria. Refer to detailed discussion in section 3.4.1 of this report.</i>
<i>PDD includes all assumptions and data used by project participants</i>	☒ Yes ☐ No	<i>The baseline scenario is explicitly prescribed in the baseline methodology. No other assumptions are discussed for this Greenfield wind power project.</i>
<i>All the references and documents used are relevant for establishing the baseline scenario</i>	☒ Yes ☐ No	<i>Without the implementation of the project, the generated electricity would be imported from the NWPG. The emission factor calculation is referred from Chinese DNA's publication.</i>
<i>All the references and documents used are correctly quoted and conservatively interpreted in the PDD</i>	☒ Yes ☐ No	<i>All references are listed transparently in Section B.6 and Annex 3 of the PDD.</i>
<i>All relevant policies / regulations considered are listed in the PDD</i>	☒ Yes ☐ No	<i>The project is a renewable energy one, which is encouraged in China. In absence of the project, the electricity generated by the project would be imported from the Grid.</i>
<i>Identified potential baseline scenarios reasonably represent what would/could occur in the absence of the proposed project activity</i>	☒ Yes ☐ No	<i>The scenario before the project's implementation is that the project generated electricity would otherwise be provided by the NWPG to which the baseline scenario is the same.</i>
<i>The baseline scenario selection is appropriate and determined according to the methodology</i>	☒ Yes ☐ No	<i>As discussed above, the baseline has been explicitly described in the applied baseline methodology.</i>
<i>The approved methodology used is applicable to the identified baseline scenario</i>	☒ Yes ☐ No	<i>The methodology application is justified. Refer to discussion in Section 3.4.1 of this report.</i>

To the Validation Team's opinion, the selected baseline methodology ACM0002 has been correctly applied to identify the most reasonable baseline scenario and the identified baseline scenario reasonably represents what would occur in the absence of the proposed project activity.

3.4.4 GHG emission reductions

The project proponent applies ACM0002 to calculate the emission. According to the methodology, the emission reductions (ER_y) by the project activity are calculated as the difference among baseline emissions (BE_y) and project emissions (PE_y):

$$ER_y = BE_y - PE_y$$

The Project does not need to consider the leakage emissions arising due to construction. The project leakage can be excluded, which is in line with the baseline methodology.

Baseline emissions:

The baseline emissions (BE_y in tCO_2) is the result of the baseline emission factor, which is reflected by the combined margin CO_2 emission factor ($EF_{grid,CM,y}$ in tCO_2/MWh), multiplied by the net electricity amount ($EG_{PJ,y}$ in MWh) exported to the NWPG: $BE_y = EG_{PJ,y} * EF_{grid,CM,y}$.

According to ACM0002, for this Greenfield wind power project, the $EG_{PJ,y}$ equals to $EG_{facility,y}$, the quantity of net electricity generation supplied by the project plant to the grid in year y . The Validation Team confirms the parameters selection in the PDD is in compliance with ACM0002 Version 12.2.

The net exported electricity to the connected grid will be monitored while the CM calculation is based upon “Tool to calculate the emission factor for an electricity system”, Version 02.2.1 /14/.

The Validation Team confirms the CM calculation as follows:

- The relevant electric power system is defined as NWPG . No off-grid power plants are included. Refer to detailed discussion in *Section 3.4.2 Project Boundary* of this report;
- The PP refers OM, BM calculation from *Notification on Determining Baseline Emission Factor of China's Grid /21/*, the latest publication by Chinese DNA when the PDD is arranged for GSP. The Validation Team has reviewed the EF spreadsheet and confirm they are correct;
- For OM calculation, a simple OM method is selected by the PP in the PDD and is justified as the low-cost/must-run resources constitute less than 50% of total grid generation in average of the five most recent years (25.36% in 2005, 23.03% in 2006, 23.15% in 2007, 22.39% in 2008 and 24.65% in 2009), the date sources of which are listed clearly in the PDD and are the latest available data source before the PDD was submitted for validation. For simple OM method, Option B ‘based on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the project electricity system’ is selected in the PDD and is justified as based data for single power plant unit are not public available in. The total electricity delivered to the NWPG has been used, which is obtained from the China Electric Power Yearbook from 2008 to 2010. Country specific data for net calorific value of each type of fossil fuel are obtained from the China Energy Statistical Yearbook from 2008 to 2010 and the IPCC 2006 default values for CO_2 emission factor of fossil fuels are deemed reasonable and conservative;
- For BM calculation, it is determined according to the guidelines on the request for deviation titled “*Application of AM0005 and AMS-I.D in China*” received from the

CDM Executive Board. It is confirmed that the data of installed capacity additions from 2007 to 2009 are used and reaches 25.93% of the total installed capacity of NWPG/21/; Thermal power plant accounts for 74.07% of the total installed capacity additions in this period. Since specific data for each technology is not available, the fraction of fuels (coal 98.36%; oil 0.04%; gas 1.60%) was estimated from the CO₂ intensity for the fuels used in NWPG. Efficiencies of 39.45% for coal power plants and 51.77% for oil and gas power plants are defined as the best technology commercially available in China by the DNA of China /21/;

- The weighting factor of W_{OM} is 0.75 and W_{BM} is 0.25 during the crediting period, which is in line with the “Tool to calculate the emission factor for an electricity system” Version 02.2.1.

The Validation Team has reviewed the OM&BM calculation spreadsheet and the official supporting documentation, finally confirms the calculation process is correct. The calculated $EF_{OM,y}$ and $EF_{BM,y}$ is 1.0001 tCO₂/MWh and 0.5851, respectively.

The resulting CM emission factor of 0.8960 tCO₂/MWh is fixed *ex-ante* for the first crediting period. The annual electricity delivered to the NWPG is expected to be 101,040 MWh, hence the expected annual baseline emission of the project is 90,531 tCO₂.

Project emissions:

The project is power generation project utilizing renewable wind energy. No other emission is revealed by the Validation Team. In this case, the project emissions are regarded as zero.

In summary, the calculation of emission reductions was correctly demonstrated by the PP according to the methodology and its tool “Tool to calculate the emission factor for an electricity system” Version 02.2.1. The table below summaries validation team’s determination of emission reduction:

Validation Criteria	Check	Validation Team’s Comments
<i>All assumptions made for estimating GHG are listed in the PDD</i>	☒ Yes ☐ No	<i>All assumptions are as per ACM0002 and listed in Section B.6 of the PDD.</i>
<i>All data used by project participants are listed in the PDD</i>	☒ Yes ☐ No	<i>All data are listed in Section B.6 and Annex 3 of the PDD.</i>
<i>Their references and sources are also listed in the PDD</i>	☒ Yes ☐ No	<i>Yes. The references and sources are clearly listed out in the PDD.</i>
<i>Formulas, parameters, values are complete, accurate, transparent and conservative</i>	☒ Yes ☐ No	<i>The baseline emissions calculation formula is transparently interpreted in the PDD.</i>
<i>All the references and documents used are correctly quoted and conservatively interpreted in the PDD</i>	☒ Yes ☐ No	<i>Yes. All references and documents are clearly listed in B.6 and Annex 3 of the PDD and conservatively interpreted in the PDD.</i>
<i>Methodology has been applied</i>	☒ Yes	<i>The emission reductions calculation</i>

<i>correctly to calculate project emissions, baseline emissions, leakage emissions and emission reductions</i>	☐ No	<i>is in compliance the selected baseline methodology.</i>
<i>All the emissions of baseline emissions can be replicated using information provided in the PDD</i>	☒ Yes ☐ No	<i>The baseline emissions calculation formula is correctly quoted as per ACM0002 and each applied data is justified in the PDD.</i>

Based on the calculations and results presented in the sections above the implementation of the project activity will result in an average *ex-ante* estimation of emission reduction conservatively calculated to be 90,531 tCO₂e per year for the selected crediting period.

All assumptions and data used by the project participants are listed in the PDD. All documentation used by the project participants as the basis for assumptions and source of data is correctly quoted and interpreted in the PDD. All values used in the PDD are considered reasonable and conservative in the context of the proposed CDM project activity. The project emission reductions are calculated according to the baseline methodology. All estimates of the baseline, project and leakage emissions can be replicated using the data and parameter values provided in the PDD.

3.5 Additionality

3.5.1 CDM Consideration and CDM Status Securing

Starting date of the project activity:

The Verification Team has assessed and verified the evidence (construction approval and main financial commitments happened up to the validation phase) and timeline for the starting date of the project activity as follows:

Milestone	Time	Reference
EIA completed	January 2011	/39/
EIA of the proposed project was approved by the Environmental Protection Administration of Gansu Province.	February 2011	/40/
FSR completed.	April 2011	/37/
Board Meeting – launch of CDM development	July 2011	/46/
The CDM development contract signed with the consultancy company	August 2011	/66/
ERPA signed	2 September 2011	/67/
Wind turbine units purchase contract was signed.	20 October 2011	/47/
Wind turbine foundation construction contract was signed.	25 October 2011	/48/
Civil construction was started.	10 November 2011	/49/

Installation contract of wind turbine units was signed.	December 2011	/51/
Turbine Tower Purchase Contract was signed.	28 December 2011	/52/
Main Transformer Purchase Contract was signed.	13 January 2012	/53/
Installation contract of 35 kV transmission line was signed.	3 February 2012	/54/
Box Transformer Purchase Contract was signed.	15 February 2012	/55/

The relevant documents have been reviewed by the Validation Team. The date of wind turbine units purchase contract signed of 20 October 2011 was identified as the first financial commitment and is therefore correctly chosen as the project activity starting date.

Prior consideration of CDM

The project starting date of 20 October 2011 is after 2 August 2008 and prior to the start of validation (30 November 2011). Thus in line with the latest the CDM EB guidance /12/ the prior consideration of CDM for the project activity was demonstrated as follows:

- The project participant notified Chinese DNA on 3 November 2011 for the commencement of the scheduled project activity and approved by NDRC on the same date;
- The project participant notified UNFCCC on 27 October 2011 for the commencement of the scheduled project activity and their intention to seek CDM status and acknowledged by EB on the same date /43/.

Notifications were thus submitted within 6 months of the project activity start date, thereby it is justified that the CDM was seriously considered in the decision to proceed with the project activity in accordance.

<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>
<i>20 October 2011</i>	<i>The wind turbine purchase contract /47/</i>	<i>3 November 2011, Notification form to NDRC; 27 October 2011, Notification form to UNFCCC /43/</i>

It is the Validation Team's opinion that the proposed CDM project activity complies with the requirements of the latest version of the guidance on prior consideration of CDM /12/.

3.5.2 Alternatives

The baseline scenario has been prescribed in the baseline methodology ACM0002. In this case, as per para 105 of VVM 01.2 /10/, no further analysis on alternatives is required.

3.5.3 Investment analysis

The additionality of the project is demonstrated by PP by using Tool for the demonstration and assessment of additionality, Version 6.0.0/7/. The Investment analysis is applied in the PDD to demonstrate that the Project is not the most economically or financially attractive or economically feasible one.

Three investment analysis methods are provided in the Additionality Tool, which are simple cost analysis, investment comparison analysis and benchmark analysis. As the project will benefit from selling electricity to the grid company besides CDM revenue, simple cost analysis is not applicable. As the project's baseline scenario is importing electricity from the Grid rather than an investment project, investment comparison analysis is not appropriate. Thus the benchmark analysis is adopted by PP, which is justified.

3.5.3.1 Assessing the suitability of the selected benchmark

A Project IRR of 8% (after tax) is chosen as the benchmark by the project proponent according to the *Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects* /35/ issued by State Power Corporation. The Validation Team has assessed this Rule and confirmed that a Project IRR of 8% (after tax) is applied to assess the new investment by power industry or power transmission & dispatching industry within China. The Validation Team is able to confirm the same benchmark has been adopted in the project's FSR/37/. Based on the sectoral expertise of the Validation Team, the benchmark of 8% is widely applied for assessing financial viability for wind farm projects within China. Hence the Validation Team is able to confirm that the selected benchmark is suitable for the project.

3.5.3.2 Assessing Project IRR Calculation

The project IRR calculation spreadsheet /18/ is available to the Validation Team. The Validation Team has assessed the spreadsheet and confirms it is in a transparent and traceable manner. And the Validation Team confirms that the calculation of Project IRR is in accordance with the requirement of the *Guidelines on the Assessment of Investment Analysis* (Version 05) /11/.

Input parameters

The input parameters used in the financial analysis of this project are taken from the FSR developed by Xinjiang Research Institute of Investigation & Design of Water Conservancy & Hydropower in April 2011/37/ and approved by Gansu DRC on 15 October 2011/38/. The input parameters used in the financial analysis can thus be considered as information provided by an independent and recognized source.

The FSR was completed in April 2011 and thus six months prior to the decision to proceed with the project activity (i.e. the starting date of the project activity) which was on 20 October 2011. Given this short period of time between finalization of the FSR and the decision to proceed with the project activity, it is unlikely in the context of the project that the input values would have materially changed. It is thus reasonable to assume that the FSR has been the basis of the decision to proceed with the investment in the project.

The Validation Team compared the input parameters for the financial analysis included in the PDD (Version 03, 4 June 2012) /2/ with the parameters stated in the FSR and was able to confirm that the values applied in the PDD are consistent with the values stated in the FSR.

Furthermore, the input parameters used in the financial analysis were compared with the data from other registered wind power CDM projects in Gansu Province regarding the static investment per kW, Plant Load Factor and annual operation and maintenance costs (O&M) per kWh, as shown in the following table (Table 1).

Table 1 - Comparison of financial indicators between the registered wind power CDM projects in Gansu Province

UNFCCC Ref. No.	Project name	Installed capacity (MW)	Investment per kW (RMB/kW)	Plant Load Factor (PLF) %	Annual O&M costs per kW RMB/kW)
2193	Gansu Yumen Sanshilijingzi Wind Power Project	49.3	8,829	24.98	198.8
2680	Gansu Yumen Diwopu Wind Power Project	49.5	9,134	24.59	204.7
2109	CGN Gansu Anxi Daliang 49.5 MW Wind Power Project	49.5	9,526	27.07	236.5
1081	Gansu Datang Yumen 49 MW Wind Power Project	49.3	9,243	23.97	255.2
2766	Gansu Jingtai 45MW Wind Power Project	45.0	9,069	21.36	217.5
2883	Gansu Baiyin Pingchuan Jiancaitang 45MW Wind Farm Concession Project	45.0	9,445	25.20	243.8
3253	Gansu Guazhou Xiangyang Phase II Wind Power Project	49.5	9,122	24.37	215.1
4462	Gansu Guazhou 300 MW Wind Power Project	300.0	7,926	25.53	235.4
3919	Gansu Tianrun Liuyuan 1st Stage 49.5MW Wind Park Project	49.5	9,653	26.99	316.1
3241	Huadian Gansu Guazhou Ganhekou No. 7 Wind Farm Project	201.0	9,722	26.00	232.9
3167	Gansu Yumen Diwopu Phase II Wind Power Project	49.5	8,620	26.24	274.3
2916	Gansu Guazhou Daliangxi Wind Power Project	49.5	9,582	26.55	211.5
3512	Gansu Datang Changma Wind Power Project	201.0	10,100	26.01	234.0
4325	Gansu Guazhou Ganhekou No 1 Wind Farm Project	199.5	9,576	24.80	227.8
4253	Gansu Guazhou Qiaowan Wind Farm Project	201.0	9,662	24.75	168.8
4278	Ganhekou V 201MW Wind Farm Project	201.0	9,556	24.64	232.5
4138	Gansu Guazhou Ganhekou No.8 Wind Farm Project	201.0	9,731	25.18	207.6
3306	Gansu Guazhou Ganhekou Fourth Wind Farm Power Generation Project	199.5	9,810	25.31	234.7
3670	CECIC HKC Gansu Changma Wind Power project	201.0	8,144.93	24.53	307.87
4254	Guazhou Beidaqiao No.1 Wind Farm Project in Gansu Province, China	201.0	9,492.69	26.21	263.68
4388	Gansu Guazhou Ganhekou No.3	201.0	9,496.77	24.51	209.22

	Wind Power Plant Project				
4734	CECIC Gansu Yumen Changma No.3 Wind Farm Project	201.0	9,850.86	26.34	214.02
4736	Huaneng Gansu Guazhou Ganhekou No.2 Wind Farm Project	199.5	9,940.85	25.15	185.96
4811	Gansu Guazhou East Beidaqiao Wind Power Project	49.5	9,684.85	26.41	245.25
4832	Gansu Guazhou Beidaqiao Wind Power Project	201.0	9,518.15	27.30	268.91
4963	Gansu Yumen Changma NO.2 Wind Farm 201MW Project	201.0	9,157.86	25.60	234.38
4971	Gansu Guazhou Beidaqiao Second Wind Power Project	201.0	9,344.98	25.72	265.52
4989	Gansu Guazhou East Beidaqiao Wind Power Phase II Project	49.5	9,241.21	25.59	242.83
5074	Gansu Yumen Yuxin Wind Power Project	49.5	8,702.06	24.61	255.56
5127	Huadian Gansu Yumen Heiyazi First Phase 48MW Wind Power Project	48.0	8,660.00	23.63	261.25
5211	Gansu Guazhou Beidaqiao No.4 200MW Wind Farm Project	201.0	10,183.88	27.81	283.75
5222	Gansu Guazhou Ganhekou No.6 Wind Farm 200MW Project	201.0	9,991.08	27.23	278.66
5264	Huadian Gansu Yumen Heiyazi Second Phase 48MW Wind Power Project	48.0	8,632.08	23.61	243.13
5405	Gansu Yumen Daba Wind Power Project	49.5	9,400.51	25.71	261.62
5427	Gansu Anxi Xiangyang Wind Power Project	49.5	7,238.79	22.86	274.28
	Aver.	-	9492.69	25.44	236.54
	Min.	-	7926.20	21.36	168.80
	Max.	-	10183.88	27.81	316.08
	The proposed project	48	8,466	24.03	296.9

1) Total Static Investment

The total static investment used in the financial analysis of the project was 406.38 million RMB which is estimated in the FSR. The reasonableness of the total static investment can be justified by the following aspects:

➤ Method 1: In comparison with other registered wind power projects in Gansu Province

The unit cost was compared with the data of other registered CDM projects in the same region. As shown in Table 1, the investment cost per kW of the proposed project is 8,466 RMB/kW, which is within the range of the value from 7,926.20 RMB/kW to 10,183.88 RMB/kW.

➤ Method 2: In comparison with the actual costs

The total static investment was further cross checked against the values in contracts already signed. The comparison is provided as below table:

Expense Item	Value in Contract (million RMB)
Expense for FSR, Investigation and Design	4.30
Expense for design of wind turbine foundation	2.80

Wind turbine equipments purchase	218.5526
Tower purchase	58.88
Construction of wind turbine foundation	15.68
Installation of wind turbine equipments	15.10
Main transformer purchase	11.65
Box transformers purchase	13.60
Construction of substation	9.40
Cable purchase	9.20
Installation of 35 kV transmission line	17.36
Total value	376.5226
Total static investment in FSR	406.38

As shown in the table above, the signed contract costs contribute to 92.7% of the total static investment stated in the FSR. Considering some other expenses not occurred in this phase, such as installation of communication and control system and management expense of construction, the total static investment estimated in the FSR is deemed appropriate.

To sum up, to the Validation Team's opinion, the total static investment applied for the proposed project is reasonable and appropriate at the time when the investment decision was made.

2) Annual Electricity Output

It is expected that the project will supply to the NWPG approximately 101,040 MWh net electricity per year at a plant load factor (PLF) of 24.03% on the basis of the FSR.

Annex 11 of CDM EB's 48th meeting report gives a guideline for validation of plant load factor for renewable energy/16/, namely a) to use plant load factor provided to banks and/or equity financiers while applying the project activity for project financing, or to the government while applying the project activity for implementation approval; b) to use the plant load factor determined by a third party contracted by the project participants (e.g. an engineering company). The Validation Team is able to confirm that the PLF applied for the proposed project meets the criteria above by the reasons as below:

- 1) The PLF applied for the proposed project was sourced from FSR which was provided to local government for getting approval;
- 2) The FSR was produced by Xinjiang Research Institute of Investigation & Design of Water Conservancy & Hydropower, which is a third party contracted by the project owner.

Since FSR was finally approved by Gansu Province DRC on 15/10/2011/38/, the Validation Team was able to confirm that the assumed PLF from the FSR is appropriate and acceptable.

According to the FSR, the average annual output is estimated based on the 35 years of wind statistic data from 1976 to 2009 provided by the local meteorological station

(Yumen Meteorological Station) and one year of onsite wind resources measurement (from 1 January 2009 to 31 December 2009). The professional WAsP software 9.0 was used to select the rich wind source area, and then using software Wind Farmer 3.6.1 to optimize the location of each turbine for maximizing power generation. The revised data was put in the WAsP software to calculate the annual theoretical power generation, which is 157,390 MWh. Subsequently the annual effective power generation of 101,040 MWh was obtained through discount by considering factors such as air density, transmission loss, trailing stream, wind turbine efficiency etc (resulting in the general discount factor of 35.8%). The operational hour with full load is equivalent to be 2105 h (101,040 MWh/48 MW). The PLF can be calculated to be 24.03% (2105 h/8760 h). The Validation Team was able to confirm that the assumed annual grid connected output from the FSR is appropriate and acceptable.

Moreover, the PLF was compared with other similar registered projects. The PLF 24.03% of the proposed project is within the range from 21.36% to 27.81%.

To the Validation Team's opinion, the annual grid connected output is conservative and applicable for investment decision.

3) Tariff

The applied tariff for the proposed project is 0.54 RMB/kWh (incl. VAT) which is estimated in the FSR by the producer. The validity of the tariff has been substantiated by the following methods:

➤ Cross check with the latest available tariff guidance

In the tariff guidance named "Notice on perfecting tariff policy of wind power" (fagaijiage [2009] 1906) issued by NDRC /33/, it has been verified that the tariff granted for the area of proposed project, Jiuquan City of Gansu Province, is 0.54 RMB/kWh (incl. VAT). The Validation Team is able to confirm that this guidance is the latest available one at the time of investment decision made by PP (i.e. the project starting date of 20 October 2011). Thus, the tariff is in accordance with the current official regulations and applicable for the proposed project.

➤ Cross check with the highest tariff issued by EB

According to "Information note on the highest tariffs applied by the executive board in its decisions on registration of projects in the People's Republic of China" (version 02) issued by EB, the highest tariff of wind power projects in Gansu Province is 0.5599 RMB/kWh (incl. VAT). This highest tariff is applicable only for the first 30,000 operating hours and the tariff of 0.2508 RMB/kWh (incl. VAT) for thermal power plants will be used for the remaining operation hours. Even introducing this highest tariff into the whole operation period of the proposed project, the project IRR will reach to 7.07% which is still lower than the benchmark of 8%.

Therefore, it is in the Validation Team's opinion that the tariff applied for the proposed project is reasonable and applicable at the time of making the investment decision by PP.

4) Annual O&M costs

The O&M costs mainly consist of maintenance costs, salary and welfare for the employees, insurance of the fixed assets, material cost and miscellaneous costs. The specific annual O&M costs of the proposed project is 296.9 RMB/kW, which is

exactly within the range from 168.80 to 316.08 RMB/kW of other similar projects in Gansu Province as shown in Table 1. The annual maintenance cost ratio to the total static investment is calculated as 1.00% during the Year 2-3, 1.80% during the Year 4-9, and 2.2% after the Year 10 in line with the FSR. According to the “*Financial evaluation and difficult question analysis for FSR research and bank loan project/64/*”, the repair & maintenance cost rate is 3%~5%. This rate for the proposed project deemed to be reasonable.

Furthermore, the breakdown items included in the O&M costs have been cross checked as below table 2:

Table 2 - Comparison of breakdown items of O&M costs between the registered wind power projects in Gansu Province

Ref. No.	Project name	Annual maintenance costs (RMB/kW)	Unit material cost (RMB/kW)	Insurance (RMB/kW)	Salary & welfare (RMB/kW)	Miscellaneous cost (RMB/kW)
2193	Gansu Yumen Sanshiliqingzi Wind Power Project	132.43	15	22.07	4.29	25
2680	Gansu Yumen Diwopu Wind Power Project	137.01	15	23.41	4.28	25
2109	CGN Gansu Anxi Daliang 49.5 MW Wind Power Project	149.51	15	23.81	17.09	35
1081	Gansu Datang Yumen 49 MW Wind Power Project	N/A	N/A	N/A	N/A	N/A
2766	Gansu Jingtai 45MW Wind Power Project	136.04	15	22.67	18.80	25
2883	Gansu Baiyin Pingchuan Jiancaitang 45MW Wind Farm Concession Project	145.33	8	19.33	31.11	40
3253	Gansu Guazhou Xiangyang Phase II Wind Power Project	137.29	10	36.95	4.56	30
4462	Gansu Guazhou 300 MW Wind Power Project	142.67	15	32.10	5.66	40
3919	Gansu Tianrun Liuyuan 1st Stage 49.5MW Wind Park Project	257.60	20	2.48	26.00	10
3241	Huadian Gansu Guazhou Ganhekou No. 7 Wind Farm Project	155.55	15	25.11	12.28	25
3167	Gansu Yumen Diwopu Phase II Wind Power Project	189.81	10	34.91	4.56	35
2916	Gansu Guazhou Daliangxi Wind Power Project	143.26	15	23.96	4.27	25
3512	Gansu Datang Changma Wind Power Project	161.60	15	26.04	6.31	25
4325	Gansu Guazhou Ganhekou No 1 Wind Farm Project	153.22	15	24.73	9.89	25
4253	Gansu Guazhou Qiaowan Wind Farm Project	96.62	15	24.82	7.37	25
4278	Ganhekou V 201MW Wind Farm Project	152.90	15	24.91	14.73	25
4138	Gansu Guazhou Ganhekou No.8 Wind Farm Project	133.10	15	22.18	12.28	25
3306	Gansu Guazhou Ganhekou Fourth Wind Farm Power Generation Project	156.95	15	25.33	12.37	25
3670	CECIC HKC Gansu	187.95	30	21.49	8.41	60

	Changma Wind Power project					
4254	Guazhou Beidaqiao No.1 Wind Farm Project in Gansu Province, China	196.47	15	21.09	6.12	25
4388	Gansu Guazhou Ganhekou No.3 Wind Power Plant Project	N/A	15	24.53	8.77	25
4734	CECIC Gansu Yumen Changma No.3 Wind Farm Project	191.33	15	22.12	5.49	25
4736	Huaneng Gansu Guazhou Ganhekou No.2 Wind Farm Project	N/A	15	24.71	8.83	25
4811	Gansu Guazhou East Beidaqiao Wind Power Project	145.25	15	25.05	20.00	40
4832	Gansu Guazhou Beidaqiao Wind Power Project	172.19	15	0.00	16.82	30
4963	Gansu Yumen Changma NO.2 Wind Farm 201MW Project	155.63	15	23.63	10.10	30
4971	Gansu Guazhou Beidaqiao Second Wind Power Project	168.74	15	23.44	12.63	40
4989	Gansu Guazhou East Beidaqiao Wind Power Phase II Project	138.63	15	23.66	25.64	40
5074	Gansu Yumen Yuxin Wind Power Project	155.56	15	31.52	28.48	25
5127	Huadian Gansu Yumen Heiyazi First Phase 48MW Wind Power Project	145.06	20	22.08	44.17	30
5211	Gansu Guazhou Beidaqiao No.4 200MW Wind Farm Project	211.93	15	22.76	10.22	25
5222	Gansu Guazhou Ganhekou No.6 Wind Farm 200MW Project	207.34	15	22.26	10.22	25
5264	Huadian Gansu Yumen Heiyazi Second Phase 48MW Wind Power Project	129.58	20	22.08	26.46	30
5405	Gansu Yumen Daba Wind Power Project	168.89	15	34.14	28.48	15
5427	Gansu Anxi Xiangyang Wind Power Project	95.61	5	23.83	17.17	25
	Min.	96.62	8	2.48	4.27	10
	Max.	257.60	30	36.95	44.17	60
	The proposed project	165.08	30	21.67	50	30

As can be seen from Table 2, all the items are within the range of value except the salary & welfare. For this item, even assuming the salary & welfare as zero into the IRR calculation spreadsheet, the resulted IRR is 7.24% which is still lower than the benchmark of 8%. Therefore, to the Valdiation Team's opinion, the annual O&M cost applied for the project is reasonable and appropriate.

5) Miscellaneous Costs

Miscellaneous cost refers to additional production expenses, administrative expenses and operating expenses (except depreciation, maintenance, insurance, material, salary and welfare). This definition was derived from the document "*Economic Evaluation Code and Parameter for Project Construction*" which was considered as the financing assessment basis and source for the FSR.

Miscellaneous cost applied in the project is 30 RMB/kW which is within the range

from 10 RMB/kW to 60 RMB/kW of other wind power projects in Gansu Province (refer to Table 1). Therefore, the Validation Team is able to confirm the miscellaneous cost identified in the FSR is reasonable.

6) Taxes and other items

The taxes and depreciation period applied in the project financial assessment are shown in the following table:

Table 3 - Tax rates involved in the project

Value added tax (VAT)	17%
Income tax	25%
Rate of residual value	3%
Depreciation period (years)	15
Education surtax (of the VAT)	5%
City construction tax (of the VAT)	5%

(a) VAT

According to “*Provisional Regulations of the People’s Republic of China on Value Added Tax*” from State Council (No. 538) issued on 10 November 2008 and implemented from 1 January 2009 /31/, the equipment VAT can be credited over the operation period against the tariff VAT until the VAT from the equipment VAT is fully recovered. The “*Notice of the Ministry of Finance and the State Administration of Taxation about policies regarding the value added tax on comprehensive utilization of resources and other products*” (No.156 [2008]) /32/ was issued on 9 December 2008 and entered into force on 1 January 2009. As stipulated in this notice (No.156 [2008]), VAT refund half upon levy shall be applicable for selling the electricity generation from wind power etc.

The Validation Team is able to confirm that the VAT regulations stated above are the latest available at the time of making the investment decision. Based on these documents, the VAT rate adopted by the proposed project is 17%. The input VAT from equipment purchase (i.e. 47.89 million RMB) has been deduced from the output VAT in line with the FSR and *Provisional Regulations on Value Added Tax*/31/. Half of the VAT incurred by the electricity sales has been annually recovered from the 6th year to 20th year of operation after the equipment VAT is fully recovered. Therefore it is considered that the VAT used in the financial analysis for the proposed project is effective and reasonable.

(b) Income tax calculation

The income tax rate of 25% is derived from the FSR, which is in line with *the Law of the People’s Republic of China on Enterprise Income Tax* /22/. It can be confirmed that the income tax regulation used for the FSR is the latest available at the time of investment decision taken by PP. Therefore, the income tax rate applied for the proposed project is reasonable.

According to Paragraph 11 of *Guidelines on the assessment of investment analysis* /11/, the interest payable should be taken into account of the income tax calculation in case where the benchmark applied in the investment analysis is post tax. And the cost of financing expenditures (i.e. loan repayments and interest) should not be included in the calculation of project IRR. As for the proposed project, the IRR benchmark of 8% is post tax and the interest tax payable has been verified to be included in the calculation of the income tax /18/. All the costs of financing expenditures are excluded in the IRR calculation.

As the long-term loan holds significant impact on the project IRR result, its interest rate is further investigated by the Validation Team. The interest of long-term loan is 6.40%, and it is confirmed to be consistent with that adopted in the FSR. As the FSR was completed in April 2011, the Validation Team cross checked the latest interest rate available before that time through web site of Bank of China /61/. The cross check enables the Validation Team to confirm that interest rate of 6.40% is the latest available one before the FSR was made. To the Validation Team's opinion, the long term interest rate of 6.40% is plausible. Considering the fluctuation of interest rate, the Validation Team has also checked the interest rate at the time of making investment decision sourced from the web site of Bank of China /62/, which is 7.05% for the interest rate of long-term loan. By introducing this interest rate to the project IRR calculation, it is found that the project IRR reaches 6.56% slightly higher than the initial 6.51%. It shows that the impact of the interest rate fluctuation during this period from the FSR completion to the project starting date on the project IRR is nearly neglectable. Therefore, the applied interest rate of long-term loan is deemed reasonable and appropriate.

According to the FSR, 80% of total investment is sourced from the bank loan which meets the requirement of the loan maximum in *Notice of Adjusting Equity Ratio for Investment Project (guofa [2009] 27)*. Considering the more loan leading to the higher interest and further less income tax, eventually the higher Project IRR is expected. In the Validation Team's opinion, the debt-equity ratio applied for calculating the Project IRR is conservative.

(c) Depreciation and residual value

The depreciation period of 15 year derived from the FSR. The rate of residual value is 3% which is recovered at the last year of operation period in the financial analysis /18/. This is in line with the *Implementation Rules for Law of the People's Republic of China on Enterprise Income Tax* /26/.

(d) City building and education tax

The city building tax 5% of VAT is in line with the *Provisional Regulations of the People's Republic of China on Urban Maintenance and Construction Tax* issued by NDRC on 8 February 1985 /27/. The education tax is 5% of VAT, comprising of state education tax of 3% in accordance with the *Provisional Regulations on Levying Educational Surtax* issued by State Council on 20 August 2005 /28/ and local educational surtax of 2% based on the local regulation /29/.

Therefore, the Validation Team confirms that all the tax rates used in the financial analysis of the proposed project are in line with the relevant regulations of the tax rates.

To sum up, all the input parameters have been assessed to be valid and applicable at the time of the investment decision as per the requirements of para 113 of VVM 01.2 /10/.

Calculation and conclusion

The project IRR calculations over 21 years of financial assessment period (including 1 year of construction and 20 years of operation) were provided in a spreadsheet /18/, which is in compliance with *Guidelines on the Assessment of Investment Analysis* /11/. The calculations were verified and found to be correct. The assumptions used in the calculations were deemed to be appropriate. The project IRR without CDM

revenues is 6.51%, which confirms that the project in the absence of CDM benefits and compared to the benchmark is not financially attractive. With CER revenues the project IRR increases to 9.29%, which is above the benchmark.

3.5.3.3 Sensitivity analysis

A sensitivity analysis was carried out for parameters contributing to more than 20% to revenues or costs in order to check the robustness of the financial analysis, which is in line with the *Guidelines on the Assessment of Investment Analysis* /11/. Reasonable variations of the total static investment, annual electricity output, on-grid tariff and annual O&M cost were checked by calculating the variation necessary to reach the benchmark and then discussing the likelihood for that to happen.

Total Static Investment

The Validation Team was able to confirm that the reduction by 9.7% in investment costs is unlikely to happen. As stated above, the unit investment cost of the proposed project is within the range of the values of the registered wind power projects in Gansu Province. As discussed above, 92.7% of the estimated total static investment has been in place and more investment will be made in parallel with the project implementation before commercial operation. Therefore, it is obviously unrealistic that the static total investment decreases by 9.7% in the context of the project activity.

Annual Electricity Output

Annual electricity output is related to the plant load factor, which is affected by wind resources on the project site. According to the FSR, the average annual output is estimated based on the 35 years' wind statistic data from 1976 to 2009 provided by local meteorological station and one year onsite wind resources measurement (from 1 January 2009 to 31 December 2009). As shown in the diagram of annual average wind speed variation presented in the page 2-5 of FSR, the annual average wind speed of the project site tended to decrease before the year of 1990 and keeps stable from 1990 to 2009. Hence, it is unlikely for the output to increase by 10.1%.

The Electricity Tariff

It was also observed that if the tariff increases by 10.1%, the project IRR will equal the benchmark. However, the tariff of the wind power has been regulated by NDRC on 20 July 2009 /33/, which shows the tariff of wind power projects located in Jiuquan City of Gansu Province is 0.54 RMB/kWh (incl. VAT).

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/65/* issued in EB61, the highest applicable wind tariff in Inner Mongolia Region applied by Executive Board is 0.5599 RMB/kWh incl. VAT. However, even applying the highest tariff of 0.5599 Yuan/kWh (VAT included) over the whole operational period, the project IRR of the proposed project will be 7.07% which still lower than the benchmark. Therefore, the validation team confirms the suitability of electricity tariff has been sufficiently demonstrated in line with EB61 Para. 78. Therefore, it is unlikely for the electricity tariff to increase significantly in the context of the project activity.

The O&M cost

The O&M cost includes maintenance costs, salary and welfare for the employees, insurance of the fixed assets, material cost and miscellaneous costs. In recent years, the price of raw material and salaries of the employees kept increasing in China. Furthermore, the average value (236.54 RMB/kW) of registered wind power projects

in past years is just 20% lower than the annual O&M cost (296.9 RMB/kW) of the proposed project. Hence, it is unlikely for the O&M cost to decrease 30.5% to reach the benchmark.

In conclusion, the Validation Team is able to confirm that the Project IRR is calculated appropriately and is compliance with the *Guidelines on the Assessment of Investment Analysis and Tool for the demonstration and assessment of additionality*. The investment analysis and sensitivity assessment have shown that the project activity is not financially attractive.

3.5.4 Barrier analysis

Not applied by the project proponent.

3.5.5 Common practice analysis

The common practice analysis was demonstrated in the PDD according to the Step 4 prescribed in *Tool for the demonstration and assessment of additionality version 06.0.0*.

Sub-step 1. Calculate applicable output range as +/-50% of the design output or capacity of the proposed project activity:

According to the FSR and the wind turbine contract, the proposed project is a newly-built 48MW windfarm project. Therefore, the applicable output range is calculated as 24MW~72MW.

Sub-step 2: In the applicable geographical area, identify all plants that deliver the same output or capacity, within the applicable output range calculated in Step 1, as the proposed project activity and have started commercial operation before the start date of the project. Note their number N_{all} . Registered CDM project activities and projects undergoing validation shall not be included in this step:

As per *Tool for the demonstration and assessment of additionality version 06*, the applicable geographical area covers the entire host country (i.e. China) as default. In the PDD, four categories of projects are identified in this step and the validation team confirms the N_{all} is completely defined as follows:

$$N_{all}=N_1+N_2+N_3+N_4$$

Category 1 (N_1): Wind power projects between 24 MW to 72 MW in Gansu Province with investment start date after year 2002.

Category 2 (N_2): Wind power projects between 24 MW to 72 MW in Gansu Province with investment start date before year 2002.

Category 3 (N_3): Power generation projects other than wind power with applicable output range in Gansu Province.

Category 4 (N_4): Power generation projects with applicable output range in other provinces of China.

Further, other CDM projects activities (i.e., registered project activities and project activities which have been published on the UNFCCC website for global stakeholder

consultation as part of the validation process) are not to be included in this analysis according to the additionality tool. For verifying the non-CDM projects within the selected scope described above, the data sources such as China Wind Farms Capacity Statistics/17/, UNFCCC website and Chinese DNA website have been used by the Validation Team. It has been validated that most of these wind power projects in Gansu Province are either registered CDM project activity or applying for CDM project activities. No windfarm project with installed capacity 24MW~72MW which started commercial operation before the project starting date on 20/10/2011 has been observed. Therefore, the number of projects in Category 1 is zero (i.e., $N_1=0$) and the output of this step is: $N_{all}=N_2+N_3+N_4$.

Sub-step 3: Within plants identified in Step 2, identify those that apply technologies different that the technology applied in the proposed project activity. Note their number N_{diff} .

As per the PDD, the N_{diff} is justified for each category which is included in N_{all} as follows:

For Category 1: The number of the projects in this category is zero and no further analysis is necessary.

For Category 2: The power industry in P. R. China underwent a significant suite of reforms in 2002⁸ and the investment environment of power production projects in China changed significantly in 2002. Therefore, the investment climate of the projects in Category 2 on the investment decision date before 2002 is considered different with the project. The validation team confirms the projects in Category 2 are proved to have different technologies with the project in line with the additionality tool.

For Category 3: Since the Project is a wind power project, those projects with different energy sources are considered as different technologies according to the *Tool for the demonstration and assessment of additionality/12/*. Therefore, the projects in Category 3 are considered different technology with the proposed project.

For Category 4: The wind power policies and tariff levels are different among different provinces of China. The projects in Category 4 are considered to have different investment climate and therefore have different technologies with the project in line with *Tool for the demonstration and assessment of additionality/12/*.

Therefore, the output of this step is: $N_{diff}=N_2+N_3+N_4$

Sub-step 4: Calculate factor $F=1-N_{diff}/N_{all}$ representing the share of plants using technology similar to the technology used in the proposed project activity in all plants that deliver the same output or capacity as the proposed project activity.

Based on above analysis, it can be concluded that: $F=1-N_{diff}/N_{all}=1-1=0$, which is lower than 0.2; $N_{all}-N_{diff}=0$, which is no greater than 3.

Therefore, the proposed project is not common practice in line with the *Tool for the*

⁸ See "Electric Power Reform", 2003 Yearbook of China Electric Power, Page 10-14.

3.6 Monitoring

The project activity applies the approved monitoring methodology ACM0002 Version 12.2.0. The selected monitoring methodology is applicable for the project activity as justified in Section 3.4.1 of this report.

The monitoring plan is in accordance with the monitoring methodology ACM0002 Version 12.2.0. The monitoring plan will give opportunity for real measurements of achieved emission reductions.

It is the Validation Team's opinion that the project participants are able to implement the monitoring plan.

3.6.1 Parameters determined ex-ante

The parameter determined ex-ante is the baseline grid emission factor. The baseline grid emission factor is calculated as a combined margin (CM), consisting of the weighted average of the OM and BM emission coefficients according to the Tool to calculate the emission factor for an electricity system. The CM value is referred from the publication of Chinese DNA /21/ and refers to the latest available one before the PDD is submitted for validation. The parameters available are listed out in section B.6.2 of the PDD with clear references. The CM calculation process is completely listed out in Annex 3 of the PDD and section B.6.3.

3.6.2 Parameters monitored ex-post

According to the ACM0002, the following parameters shall be monitored ex-post for the proposed project activity:

- The electricity exported to the grid by the project activity, $EG_{to\,grid,y}$;
- The electricity imported from the grid by the project activity, $EG_{from\,grid,y}$;
- Quantity of net electricity generation supplied by the project to the grid, $EG_{facility,y}$.

The parameters $EG_{to\,grid,y}$ and $EG_{from\,grid,y}$ will be monitored by the bidirectional meters (main and backup) installed at the 110 kV side of the on-site substation. Through the monitored parameters, the parameter $EG_{facility,y}$ (Quantity of net electricity generation supplied by the project plant/unit to the grid in year y) can be calculated as the difference of $EG_{to\,grid,y}$ and $EG_{from\,grid,y}$.

The electricity will be measured continuously and monthly recorded, which is in line with the applied monitoring methodology. The accuracy grade of all the meters will be 0.5s according to local industry standard /34/. Electricity Transaction Notes or sales receipts will be provided for cross check. All the electricity meters will be calibrated once a year by the qualified third party according to the requirement of local industry standards. All data including the calibration records will be archived and be kept at least for 2 years after the end of the crediting period.

To the Validation Team's opinion, the monitored data is complete and is in line with the applied monitoring methodology.

3.6.3 Management system and quality assurance

The following items are included in the monitoring plan of the PDD:

- Monitoring system organization;
- Installation of meters;
- Calibration of meters & metering;
- Data collection and management system;
- Quality control;
- Reporting.

The detailed contents have been elaborated in the PDD /2/ and all indicators of importance for controlling and reporting of project performance are incorporated in the monitoring plan and in compliance with ACM0002. The Validation Team considers the project participant has the capability to implement the monitoring plan.

3.7 Sustainable Development

A letter of approval (LoA)/3/ issued by Chinese DNA has confirmed that the project assists in achieving sustainable development.

3.8 Environmental Impacts

Environmental Impact Assessment (EIA) of the project activity /39/ has been conducted in and finally approved by Environment Protection Bureau of Gansu Province on, which indicates the EIA has been performed in accordance with all relevant local regulations. A comprehensive description of the project activity's environmental impacts during the construction period and operation period, such as dust, noise, waste water, solid waste and ecosystem, has been described properly in Section D.1 of the PDD /2/. According to the EIA and its approval, no significant environmental impacts are expected which was also confirmed by the officer from the local Environment Protection Bureau /iii/.

3.9 Local Stakeholder Consultation

The local stakeholder consultation was conducted through a stakeholder meeting and questionnaires survey on 4 August 2011.

The project owner held a stakeholder consultation meeting on 4 August 2011. 49 stakeholder representatives participated the meeting, who are from the local government and nearby villages around the project site. In the meeting, 49 questionnaires on this project were distributed to the stakeholders for inviting their comments regarding the impacts by the proposed project /20/ and 100% questionnaires were returned back. The comments received have been summarized objectively in the Section E.2 of the PDD /2/. The survey shows that 45 representatives held support the construction of the proposed project, others keep on neutral ground and there is no negative opinion on this project /20/. The consultation result was also confirmed by the interview with the local stakeholder representatives /iv/.

In conclusion, it is the Validation Team's opinion that the local stakeholders have been consulted in an appropriate manner.

3.10 Comments by Parties, Stakeholders and NGOs

The PDD of 'Version 01, 18 November 2011' was made publicly available on UNFCCC's climate change website (<https://cdm.unfccc.int/Projects/Validation/DB/X049C3GZ3XJW4YVZDSJJFO5KAUFENI/view.html>) and Parties, stakeholders and NGOs were through the CDM website invited to provide comments during a 30 days period from '3 December 2011 to 1 January 2012', where no comments were received.

Appendix A

CDM VALIDATION PROTOCOL

CECEP Gansu Yumen Changma Daba North Wind Farm Project in P.R.China

REPORT No. 01 997 9105067508

Table 1: Validation requirements					
(based on § 37 of the CDM Modalities and Procedures and on CDM Validation and Verification Manual, Annex 3 of EB44)					
Checklist question	Ref.	MoV¹	Findings, comments, references, data sources	Draft conclusion	Final conclusion
1. Approval					
1.1 Have Letters of Approval have been provided from all involved Parties? If yes, indicate: – when and by which Party the LoA has been issued, with a clear reference to the LoA itself and any supporting documentation; – whether the LoA was provided to the DOE by the project participants or directly by the DNA; – the means of validation employed to assess the authenticity of the document; and – by a clear statement, that the DOE considers the LoA to be valid.	/1/ /3/ /4/ /5/	DR,I	CAR1 The Letters of Approval from both Parties United Kingdom of Great Britain and Northern Ireland (Annex I) and P.R.China (Host) have not been received.	~~4~~ CAR1	OK (Refer to Table 2)
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/ /4/	DR,I	As indicated in the PDD, both Parties are United Kingdom of Great Britain and Northern Ireland and P.R.China.	CAR1	OK (Refer to Table 2)

¹ MoV = Means of Verification, DR = Document Review, I = Interview, www = internet search, OSV= On Site Visit

	/5/		The host party is P.R.China, which is a party to Kyoto Protocol and ratified it on 30 August 2002. The Annex I party is U.K., which is also a party to Kyoto Protocol and ratified it on 31 May 2002. http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php See CAR1		
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/ /4/ /5/	DR,I	See CAR1	~~CAR1~~	OK (Refer to Table 2)
1.4 Is the participation in the CDM project activity voluntary <u>and</u> is this stated in all LoAs? <i>Indicate the source of proof.</i>	/1/ /3/ /4/ /5/	DR,I	See CAR1	~~CAR1~~	OK (Refer to Table 2)
1.5 Is the LoA unconditional with respect to 1.2 to 1.4?	/1/ /3/ /4/ /5/	DR,I	See CAR1	~~CAR1~~	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 LoAs and Modalities of Communication? <i>Provide Yes/No answer, and include details into Tables 2, 3 and 4 accordingly.</i>	/1/ /3/ /4/ /5/	DR,I	See CAR1 The title of the CDM project activity given in the PDD is CECEP Gansu Yumen Changma Daba North Wind Farm Project which is identical with the title stated in the Modalities of Communication.	~~CAR1~~	OK (Refer to Table 2)
1.7 If any of provided LoAs 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/ /4/ /5/	DR,I	See 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/ /4/ /5/	DR,I	The relevant evidences need to be provided to justify there is no public funding from Parties included in Annex I Party.		OK
2. Participation (VVM E.2)					
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	/1/ /3/ /4/	DR,I	CL2 The contact information in the MoC is not clearly identified. Further, the date of signatures in Section 3 are	~~CL2~~	OK (Refer to Table 2)

	consistent with the contact details provided in Annex 1 of the PDD?	/5/		not indicated.		
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, 3 and 4 accordingly.</i>	/1/ /3/ /4/ /5/	DR,I	Pending on the closure of CAR1	CAR1	OK (Refer to Table 2)
3. Project Design Document (VVM E.3)						
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, 3 and 4 accordingly.</i>	/1/ /8/ /9/	DR,I	The PDD was made for GSC from 3 December 2011 to 1 January 2012 and the PDD adopted the PDD template of Version 03, which is the latest template available at the UNFCCC's website.		OK
3.2	Has the PDD been established in accordance with the CDM requirements for completing PDDs issued by the CDM EB?	/1/ /8/ /9/	DR	Yes. The PDD has been established in accordance with the guidelines for completing PDD issued by EB.		OK
4. Project Description (VVM E.4)						
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?	/1/ /37/ /i/	DR,I, OSV	CL3	CL3	OK (Refer to Table 2)

4.1b) Is the description (incl. any process flow-charts, Spreadsheets etc.) complete, coherent and consistent with the provisions of the monitoring plan?					
4.2 In the case of green field project activity, is the project design described sufficiently by means of specifications, drawings and manuals? <i>Provide Yes/No answer and indicate the documents which have been reviewed in relation to the issue.</i>	/1/ /37/ /i/	DR,I, OSV	Yes. The project is a Greenfield project activity which has been confirmed by the investigation during the on site visit. The description in the PDD has been substantiated by the wind turbine contract and FSR.		OK
4.3 Does the project activity reflects 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/ /37/ /i/	DR,I, OSV	Yes. The project activity reflects current good practice. According to the FSR conducted by Xinjiang Research Institute of Investigation & Design of Water Conservancy & Hydropower, the project acitivity involves installation of 16 sets of wind turbines with the capacity of 3,000 kW each unit. The wind turbine generation units with similar capacity represent the current advanced technology in China.		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/ /37/ /i/	DR,I, OSV	Not applicable for this Greenfield project activity.		OK
5. Baseline and Monitoring methodology					
5.1 General requirements					
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/ /6/	DR,I,	The proposed project activity adopts the approved consolidated baseline and monitoring methodology ACM0002, "Consolidated baseline and monitoring methodology for grid-connected electricity generation from renewable sources", Version 12.2.0, which is Valid from 17 Sep 2010 onwards.		OK
5.2 Applicability of the selected methodology					
5.2.1 Does the project activity qualify under the criteria for small-scale CDM project activities set out in § 6 I of decision 17/CP.7 and Annex II of the	/1/ /6/ /14/	DR,I, OSV	Not applicable for the proposed project activity.		OK

Modalities and Procedures for the CDM? <i>Please provide Yes/No response and description of how this was validated.</i> <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>					
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? <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>	/1/ /6/ /14/	DR,I,	Not applicable for the proposed project activity.		OK
5.2.2 Are all applicability conditions of the selected baseline and monitoring methodology and all tools involved satisfied by the project activity? <i>Please indicate Yes/No answer. In case of positive conclusion provide details of the validation measures. Otherwise</i>	/1/ /6/ /7/ /14/	DR,I, OSV	Yes. All applicability conditions of the selected baseline and monitoring methodology and all tools involved are satisfied by the project activity.		OK

<i>amend the Tables 2, 3 and 4 accordingly.</i>					
5.2.3 Is the selection of the applied baseline and monitoring methodology justified?	/1/ /6/	DR,I,	Yes. The selection of the baseline and monitoring methodology has been justified in Section B.2 of the PDD.		OK
5.2.4 Is the selected methodology correctly quoted in all related documents?	/1/ /6/	DR,I,	Yes. The selected methodology has been correctly quoted in all related documents.		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/ /6/ /7/ /14/	DR,I, OSV	Yes, the PDD sufficiently describes all the GHG emission sources of the project activity and no other GHG emission sources or sinks are expected to contribute more than 1% of the overall expected average annual emission reductions.		OK
5.3 Project boundary					
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/ /6/ /14/	DR, I	CL5 The grid connection scheme needs to be justified with supporting document.	CL5	OK (Refer to Table 2)

	/42/				
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/ /6/ /14/ /42/	DR	Pending on the closure of CL5	CL5	OK (Refer to Table 2)
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/ /6/ /14/	DR	Not applicable.		OK
5.4 Baseline identification					
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/ /6/ /14/	DR, OS V	Yes. The identified baseline scenario is exactly the same to that defined in the applied methodology ACM0002.		OK
5.4.1.1 Is the identified baseline scenario plausible?	/1/ /6/ /14/	DR, OS V	Yes. The identified baseline scenario is plausible.		OK
5.4.1.2 Are all assumptions stated in a transparent and conservative manner?	/1/ /6/ /14/	DR, OS V	Yes. Before implementation of the proposed project, the same amount of electricity that would be generated by the project will be imported from the connected grid.		OK
5.4.2 Does the selected methodology	/1/	DR, OS	Yes. For this Greenfield grid		OK

require the use of tools <u>and</u> does PDD reflects that correctly?	/6/ /7/ /14/	V	connected wind farm project and taking notice that there is no fossil fuel fired on project site, 'Tool for the demonstration and assessment of additionality' and 'Tool for calculation of emission factor for electricity systems' are required by methodology ACM0002 to apply in the PDD.		
5.4.2.1 Were all the tools applied correctly?	/1/ /6/ /14/	DR,OS V	'Tool for the demonstration and assessment of additionality' (Version 6.0.0) and 'Tool for calculation of emission factor for electricity systems' (Version 02.2.1) has been applied in the webhosted PDD, which are valid versions at the time of PDD for publication.		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/ /6/ /14/	DR,OS V	CAR3 Please refer to PDD Section B.5, the discussion of possible alternatives are not required since the ACM0002 has prescribed the baseline scenario.	~~CAR3~~	OK (Refer to Table 2)
5.4.3.1 Has the choice of the baseline scenario been done using conservative	/1/ /6/	DR,OS V	Yes. The choice of the baseline scenario is in compliance with the		OK

assumptions?	/14/		selected baseline methodology.		
5.4.4Is the identified baseline scenario reasonable according to the assumptions, calculations and rationales used in the PDD and other reference sources?	/1/ /6/ /14/	DR,OS V	Yes. The identified baseline scenario is reasonable and is in line with the applied baseline methodology ACM0002.		OK
5.4.6Does the PDD describe how the national and sectoral policies relevant to the baseline scenario have been identified and considered in the PDD?	/1/ /6/ /14/	DR,OS V	Not applicable.		OK
5.4.7Does 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/ /6/ /14/	DR,OS V	Yes. The PDD has provided a verifiable description of the identified baseline scenario, which is that the same amount of electricity generated by the proposed project activity will be imported from the grid NWPG.		OK
5.5 Algorithm and/or formulae used to determine emission reductions					
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	/1/ /6/ /14/ /19/ /21/	DR,I	CL4 Please refer to Section B.6.1 of the PDD, it should be clearly clarified how the EG _{facility,y} is determined. Further, the connected electricity system is not discussed as per the <i>Tool to calculate the emission factor of an electricity system version 02.2.1.</i>	CL4	OK (Refer to Table 2)

consistency of parameter values between calculation spreadsheets and PDD.					
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/ /6/ /14/ /19/ /21/	DR,I	Pending on resolving CL4.	CL4	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/ /6/ /14/ /19/ /21/	DR,I	Yes. All the data and parameters that are available at validation have been listed in the Section B.6.2 of PDD. All data sources, assumptions and calculations refer to the <i>Notification on Determining Baseline Emission Factor of China's Grid</i> for the NWPG issued by NDRC, China's DNA on 20 October 2011.		OK
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/ /6/ /14/ /19/ /21/	DR,I	Yes. The parameters that will be monitored on implementation are the electricity data dispatched between the project and connected grid. The estimates provided in the PDD are sourced from the FSR, which is produced by a third party, Xinjiang Research		OK

			Institute of Investigation & Design of Water Conservancy & Hydropower, and considered reasonable.		
5.5.5 Have the major risks and uncertainties, which can influence the emission reduction estimates, been identified and addressed in the PDD?	/1/ /6/ /14/ /19/ /21/	DR,I	No such major risks and uncertainties which can influence the emission reduction estimates are identified and addressed in the PDD.		OK
5.6 Leakage					
5.6.1 Has the leakage been identified and calculated according to the approved methodology?	/1/ /6/ /14/	DR,I, OSV	Leakage is not considered in ACM0002.		OK
5.6.2 Have the leakage been addressed in complete, conservative and substantiated manner?	/1/ /6/ /14/	DR	Not applicable		OK
5.6.3 Are uncertainties in the leakage emission estimates properly addressed?	/1/ /6/ /14/	DR	Not applicable		OK
6. Methodology-related issues for afforestation or reforestation CDM project activities					
Add specific A/R requirements – if applicable!			Not applicable for the proposed project.		OK
7. Additionality					

7.1 Prior consideration of the CDM (VVM E.6.III.a)					
7.1.1Is there documented evidence provided by the project participants on how and when the decision to proceed with the project activity was taken?	/1/ /47/ /48/ /49/	DR,I, OSV	Yes. The documented evidence has been provided by the project participant, based on which, the Validation Team is able to confirm that the investment decision to proceed with the project activity was made on 20 October 2011, i.e. the signature date of wind turbine contract.		OK
7.1.2Is the starting date of the project activity, reported in the PDD, in accordance with the "Glossary of CDM terms" and 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/ /10/ /13/ /47/ /48/ /49/	DR,I, OSV	Yes. The signature date of wind turbine contract has been identified as the starting date of the project activity, which is in accordance with the "Glossary of CDM terms" and CDM VVM (§97). The Validation Team confirms that the starting date has been correctly reported in the Section B.5 and C.1 of the PDD.		OK
7.1.3Is the date stated in the provided evidence consistent with other available evidence (e.g. dates of construction, purchase orders for equipment)?	/1/ /47/ /48/ /49/	DR,I, OSV	Yes. The date stated in the PDD has been substantiated by the provided evidence, such as the wind turbine purchase contract, construction contract, construction starting approval, etc.		OK
7.1.4If the project was not published and	/1/	DR,I,	CAR2	~~CAR2~~	OK

the starting date is on or after 2 nd 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?	/12/ /43/ /44/	OSV	The date of prior consideration of the CDM form submitted to NDRC stated in the webhosted PDD is inconsistent with the date identified in the provided form.		(Refer to Table 2)
7.1.5 For the project activities with a starting date before 2 nd August 2008 and before the actual publication, was there enough evidence presented to prove that PPs were previously aware of CDM?	/1/ /12/	DR,I, OSV	Not applicable.		OK
7.1.6 For the project activities with a starting date before 2 nd 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/ /12/	DR,I, OSV	Not applicable.		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/ /36/ /38/	DR,I, OSV	Yes. The business licence has been issued by Administration for Industry and Commerce and the project was approved by the DRC of Gansu Province.		OK

7.1.8 For the project activities with a starting date before 2 nd 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/ /12/	DR,I, OSV	Not applicable		OK
7.1.9 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/ /46/	DR,I, OSV	The project starting date is 20 October 2011, which is only more than one month before the commencement of validation on 3 December 2011 (i.e. the date of PDD published). No significant gap exists between these two dates.		OK
7.2 Identification of alternatives					
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/	DR	CAR3 Please refer to PDD Section B.5, the discussion of possible alternatives are not required since the ACM0002 has prescribed the baseline scenario.	~~CAR3~~	OK (Refer to Table 2)
7.2.2 Does the list of alternatives include as one of the options that the project activity is undertaken without being	/1/ /6/	DR	Pending on resolving CAR3.	~~CAR3~~	OK (Refer to Table 2)

registered as a CDM project activity?					
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? <i>Note: All alternatives listed in the selected methodology should be included, as well as those not covered by the methodology.</i>	/1/ /6/	DR	Pending on resolving CAR3.	~~CAR3~~	OK (Refer to Table 2)
7.2.4 Is the exclusion of the alternatives for legal reasons justified? <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>	/1/ /6/	DR	Pending on resolving CAR3.	~~CAR3~~	OK (Refer to Table 2)
7.3 Investment Analysis					
7.3.1 Are all sources of revenues (including savings) have been considered in the PDD and all calculations?	/1/ /11/ /18/ /35/ /37/	DR	All sources of revenues, including electricity sales, VAT refund, the recovery of working capital and residue value have been considered in the PDD and all calculations.		OK

7.3.2 Is the type of investment analysis selected correctly in the PDD?	/1/ /11/ /18/ /35/ /37/	DR	Yes. Benchmark analysis has been correctly applied in the PDD.		OK
7.3.3 Is the selected financial indicator chosen and applied correctly?	/1/ /11/ /18/ /35/ /37/	DR	Yes. The project IRR in China's power generation industry is 8% (after tax), which is regarded as the benchmark for investing in renewable energy generation projects in China.		OK
7.3.4 Is the guidance on IRR calculation and assessment correctly applied? <i>Note: Means of validation should be recorded.</i>	/1/ /11/ /18/ /35/ /37/	DR	CL6 The likelihood of varying the total investment to make the IRR reach the benchmark needs to be further assessed with the sufficient evidences.	CL6	OK (Refer to Table 2)
7.3.5 In case project participants use values	/1/	DR	The FSR was completed in April		OK

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?	/11/ /18/ /35/ /37/		2011 and thus about six months prior to the decision to proceed with the project activity (i.e. the starting date of the project activity) which was on 20 October 2011. Given this short period of time between finalization of the FSR and the decision to proceed with the project activity, it is unlikely in the context of the project that the input values would have materially changed.		
7.3.6 Are all the values consistent between FSR and PDD <u>and</u> are inconsistencies properly justified?	/1/ /11/ /18/ /35/ /37/	DR	CAR4 The value of working capital used in the IRR calculation is inconsistent with the value sourced from the FSR, which needs to be clarified. Moreover, please clarify how the interest cost has been calculated in the IRR spreadsheets.	~~CAR4~~	OK (Refer to Table 2)
7.3.7 Were all the values from FSR applicable and valid at the time of the investment decision?	/1/ /11/ /18/ /22/	DR	Yes. Considering the short period of time between finalization of the FSR and the decision to proceed with the project activity, it is unlikely in the context of the		OK

	/26/ /27/ /28/ /29/ /30/ /31/ /32/ /33/ /35/ /37/		project that the input values would have materially changed. The input parameters have been cross-checked against the latest available regulations at the time of investment decision. It is thus reasonable to assume that the FSR has been the basis of the decision to proceed with the investment in the project.		
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/ /11/ /18/ /35/ /37/	DR	Yes. Benchmark of 8% (after tax) for the project IRR has been widely applied in power industry of China. It is reasonable to assume that no investment would be made at a rate lower than the benchmark.		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/ /11/ /18/ /35/ /37/	DR	Pending on the closure of CL6 and CAR4	CL6 CAR4	OK (Refer to Table 2)

7.4 Barrier analysis

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/	DR	No other barrier analysis is adopted in the PDD.		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/	DR	Not applicable		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/	DR	Not applicable		OK
7.5 Common practice analysis					
7.5.1 If the PPs claim in the PDD that CDM project activity is the "first of its kind",	/1/ /6/	DR	No. The PPs do not claim in the PDD that the proposed project		OK

is it justified?			activity is the first of its kind.		
7.5.2 Are the geographical boundaries of the project activity identified correctly?	/1/ /6/	DR	CAR5 The common practice analysis in Section B.5 of the PDD shall be revised according to the selected <i>Tool for the Demonstration and Assessment of Additionality</i> .	~~CAR5~~	OK (Refer to Table 2)
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/	DR	Pending on the closure of CAR5	~~CAR5~~	OK (Refer to Table 2)
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/ /17/	DR	Pending on the closure of CAR5	~~CAR5~~	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/ /17/	DR	Pending on the closure of CAR5	~~CAR5~~	OK (Refer to Table 2)
8. Monitoring plan					

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/ /14/	DR	CAR6 Please keep the value of each parameter consistent between the Section B.6.2 and Annex 3 of the PDD.	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 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.</i> <i>Example: liquid fuels may be monitored as weight or volume. If measured as volume, the measurement method and equipment</i>	/1/ /6/ /14/	DR,I	CAR7 The measuring frequency for the parameters to be monitored in the Section B.7.1 needs to be described following the applied monitoring methodology ACM0002 Version 12.2.0.	CAR7	OK (Refer to Table 2)

<i>including the according unit (e.g., liter) shall be described in B.7.1, as well as the conversion into weight units as needed.</i> <i>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.</i>					
8.3 Are values of the ex-ante parameters / monitoring parameters selected correctly and conservative in accordance to methodology or tools? <i>See the NOTE in section 3.6.1 above!</i>	/1/ /6/ /14/ /21/	DR,I, OSV	Yes. The ex-ante parameters are the grid emission factors, which is referenced from the latest Chinese DNA's publication that is available to PP before the PDD's GSP.		OK
8.4 Is the measurement equipment for each parameter described and deemed appropriate?	/1/ /6/ /14/	DR,I, OSV	CL7 The further clarification is sought on the location of the main monitoring meter and who will be responsible for the data monitoring.	~~CL7~~	OK (Refer to Table 2)
8.5 Is the measurement accuracy addressed and deemed appropriate?	/1/ /6/ /14/ /34/	DR,I, OSV	Yes. The measurement accuracy has been addressed in the PDD and is deemed to be appropriate by reviewing relevant technical code, e.g. <i>Technical Administrative Code of DL/T448-2000 Electric Energy</i>		OK

			<i>Metering.</i>		
8.6 Are procedures in place on how to deal with erroneous measurements <u>and</u> are the corrective actions identified?	/1/ /6/ /14/	DR,I, OSV	Yes. The procedures on how to deal with erroneous measurements and the corrective actions are in place.		OK
8.7 Is the frequency of measurement identified and deemed appropriate?	/1/ /6/ /14/	DR,I,	See CAR7	CAR7	OK (Refer to Table 2)
8.8 Is the monitoring plan documented according to the approved methodology and in a complete and transparent manner?	/1/ /6/ /14/	DR	Yes. The monitoring plan is documented according to ACM0002.		OK
8.9 Are the sampling, measurement methods and procedures defined? <i>Where applicable, refer to the GENERAL GUIDELINES¹ FOR SAMPLING AND SURVEYS FOR SMALL-SCALE CDM PROJECT ACTIVITIES</i>	/1/ /6/ /14/	DR	Not applicable		OK
8.10 Are procedures identified for maintenance of monitoring equipment and installations?	/1/ /6/ /14/	DR	Yes. Procedures for maintenance of monitoring equipments have been identified.		OK
8.11 Are the equipment calibration intervals identified and justified?	/1/ /6/	DR	Yes. The metering equipment will be calibrated and checked by qualified third party for accuracy		OK

	/14/ /34/		according to local industry standards, which can be identified in the PDD.		
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/ /14/	DR	Yes. The procedures for day-to-day records handling has been described in the Data collection and management system of the monitoring plan.		OK
8.13 Are the monitoring arrangements described in the monitoring plan feasible within the project design?	/1/ /6/ /14/	DR	Yes. The monitoring arrangements described in the monitoring plan are deemed to be feasible within the project design.		OK
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/ /14/	DR,I, OSV	Pending on the closure of CAR7 and CL7.	~~CAR7~~ ~~CL7~~	OK (Refer to Table 2)
8.15 Do the PPs make provisions for personnel training needs?	/1/ /6/ /14/	DR,I	CL8 For verifying the efficiency of the training, the evidences on the training arrangement need to be provided.	~~CL8~~	OK (Refer to Table 2)
8.16 Is the authority and responsibility of	/1/	DR,I	Yes. The monitoring management		OK

overall project management clearly described?	/6/ /14/		structure has been clearly described in the PDD.		
8.17 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	/1/ /6/ /14/	DR,I	No such emergencies that can cause the unintended emissions are identified in the PDD.		OK
8.18 Are procedures identified for review of reported results/data?	/1/ /6/ /14/	DR,I	Yes. Procedures for monitoring data review have been identified in the "Quality control" part of the monitoring plan.		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/ /14/	DR,I	Yes. It has been clearly addressed in the PDD that all data including calibration records will be kept until 2 years after the end of the total crediting period of the CDM project, which is in accordance with the applied monitoring methodology.		OK
8.2 Monitoring of the leakage					
8.2.1 Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	/1/ /6/	DR	Leakage is not considered in ACM0002.		OK
8.2.2 Is the choice of project leakage indicators made according to selected	/1/ /6/	DR	Not applicable		OK

methodology in a reasonable and conservative manner? <i>Note: local knowledge and sectoral expertise shall also be considered.</i>					
8.2.3 Is the measurement method clearly stated and deemed appropriate for each leakage value?	/1/ /6/	DR	Not applicable		OK
9. Sustainable development					
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?	/3/	DR	Pending on the closure of CAR1.	~~CAR1~~	OK (Refer to Table 2)
9.2 If PDD indicates any additional environmental benefits of the project, other than GHG emission reductions, were those benefits properly substantiated?	/1/ /i/ /iii/	DR, I, OSV	Yes. By interviewing the project owner and the local authorities, the Validation Team was introduced that the project will benefit the local community by providing both temporary and permanent employment opportunities, increasing tax revenue and decreasing other pollutants resulting from the traditional power generation i.e. with fossil fuel energy.		OK
10. Stakeholders' consultation and comments					

10.1 Were the stakeholders identified in appropriate and complete manner?	/20/ /i/ /iv/	DR,I	Yes. The stakeholders were identified in appropriate and complete manner.		OK
10.2 Are the identified stakeholders plausible?	/20/ /i/ /iv/	DR,I	Yes. Local residents, workers, teachers and authorities are invited for the stakeholder consultation.		OK
10.3 Does PDD describe the means being used to invite local stakeholder's comments?	/20/ /i/ /iv/	DR,I	Yes. The PDD has described the means being used to invite local stakeholder's comments. That is discussion meeting and distributing the questionnaires for inviting the comments.		OK
10.4 Were those means appropriate?	/20/ /i/ /ii/ /iii/ /iv/	DR,I	Yes. The means applied was considered appropriate.		OK
10.5 Was the project presented to the stakeholders in unbiased manner?	/20/ /i/ /ii/ /iii/ /iv/	DR,I	Yes. The background of the project activity has been described in the questionnaire and also introduced in the discussion meeting in unbiased manner, which has been confirmed by interview with the local stakeholders during the on site visit.		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?	/20/ /i/ /ii/ /iii/ /iv/	DR,I	Yes. By interview with the local authorities, the Validation Team is able to confirm that the stakeholder consultation process has been carried out in accordance with relevant regulations/laws.		OK
10.7 Is a summary of the stakeholder comments provided in the PDD?	/1/ /20/	DR	Yes. The summary of the stakeholder comments has been provided in the PDD.		OK
10.8 Has due account of any stakeholder comments been taken by PPs and reflected in the PDD?	/1/ /20/	DR	Yes. The survey results turn out that all interviewed local stakeholders support the implementation of the project and think the project will bring benefits for local community.		OK
11. Environmental impacts					
11.1 Is the documentation supplied by the PPs regarding environmental impacts relevant and accurately reflected in the PDD?	/1/ /39/ /40/	DR	Yes. An EIA has been provided by the PP for this project and accurately reflected in 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>	/1/ /39/ /40/	DR	Yes. The EIA is requested for the proposed project.		OK
11.3 In case an EIA is required, has the EIA	/1/	DR	Yes. The EIA is approved by		OK

has been approved by local authorities and is the outcome accurately reflected in the PDD?	/39/ /40/		Environment Protection Bureau of Gansu Province.		
11.4 Does the PDD include a brief description of the environmental effects of the project, including transboundary?	/1/ /39/ /40/	DR	Yes. A brief of environment effects has been prescribed in the PDD. No transboundary effects are expected as per the EIA.		OK
11.5 Are those effects properly addressed in the design of the project activity?	/1/ /39/ /40/	DR	Yes. Every identified environmental impact has been addressed in the SECTION D of PDD.		OK
11.6 Does the project comply with environmental legislation in the host country?	/1/ /39/ /40/	DR,I	Yes. The project complies with Chinese environmental legislation which can be confirmed by the EIA approval.		OK

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

(35) The DOE shall raise a corrective action request (CAR) if one of the following occurs:

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

(36) The DOE shall raise a clarification request (CL) if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

Observation CAR/CL	Reference	Summary of project owner response	Validation team conclusion
CAR1 The Letters of Approval from both Parties United Kingdom of Great Britain and Northern Ireland (Annex I) and P.R.China (Host) have not been received. Further, the name of the Annex I Party in PDD Section A.3 shall be revised as United Kingdom of Great Britain and Northern Ireland.	1.1/1.2/1.3/1.4 1.5/1.6/1.7/2.2 /9.1	It was provided for the LOA from DNA.	OK. The LoA from both parties have been received and the name of the Annex I party has been revised in the PDD. The CAR is therefore closed.
CAR2 The date of prior consideration of the CDM form submitted to NDRC stated in the webhosted PDD is inconsistent with the date identified in the provided form.	7.1.4/7.3.9	Table 4 in Section B.5 was corrected to reflect the precise data in the prior consideration form.	OK. It is revised in the PDD. The CAR is therefore closed.
CAR3 Please refer to PDD Section B.5, the discussion of possible alternatives are not required since	5.4.3/7.2.1~7.2.4	The content in Section B.1 and B.5 was updated to reflect the request in the "Combined tool to identify the baseline scenario and demonstrate	OK. It is revised in the PDD. The CAR is therefore closed.

the ACM0002 has prescribed the baseline scenario.		additionality”.	
CAR4 The value of working capital used in the IRR calculation is inconsistent with the value sourced from the FSR, which needs to be clarified. Moreover, please clarify how the interest cost has been calculated in the IRR spreadsheets.	7.3.6/7.3.9	The working capital value used in the previous version of PDD is a typo, and now was corrected to be consistent with FSR. Interest cost in the construction period was calculated as the loan multiplied with the interest rate (6.40%), and divided by 2, considering that generally speaking, the occurrence of load commonly occurred at the middle of the year, i.e. only half a year for the interest generated. This is a common practice for construction project, refereeing to http://baike.baidu.com/view/858548.htm. Interest cost in the following years was obtained by the remaining loan multiplied by the interest rate. The remaining loan for Year t is that in Year t-1 minus the principle payment at that year. Also the sequence of calculation of VAT drawback and deduction from equipment VAT was corrected to	OK. It is revised in the IRR spreadsheets. The CAR is therefore closed.

		reflect the common accounting principle. And the investment level was corrected to response to Point 3. After the correction above, the IRR of the Project with no CERS will be 6.51%, and the PDD and spreadsheet were updated correspondingly.	
CAR5 The common practice analysis in Section B.5 of the PDD shall be revised according to the selected <i>Tool for the Demonstration and Assessment of Additionality</i>.	7.5.1~7.5.6	It was done to reflect the Tool ver 6.0.0.	OK. It is revised in the PDD. The CAR is therefore closed.
CAR6 Please keep the value of each parameter consistent between the Section B.6.2 and Annex 3 of the PDD.	8.1	Several parameters in Section B.6.2 were corrected to be consistent with the notification of NDRC on the emission factor and correct Annex 3.	OK. It is revised in the PDD. The CAR is therefore closed.
CAR7 The measuring frequency for the parameters to be monitored in the Section B.7.1 needs to be described following the applied monitoring methodology ACM0002 Version 12.2.0.	8.2/8.7/8.14	"Monitoring frequency" item was added to reflect the requirement of the methodology in Section B.7.1	OK. It is revised in the PDD. The CAR is therefore closed.
CL1 The relevant evidences need to be	1.8	From the loan contract commitment letter from the bank and FSR, we can	OK. By verifying the FSR approval /38/,

provided to justify there is no public funding from Parties included in Annex I Party.		see that the project will be financed by the loan borrowed from the bank and self-owned cash and there is no supporting source from ODA.	the Validation Team understood that the 80% of total investment would be loaned from the Chinese bank. Bank of China has issued the Loan Commitment Letter/60/ to the project owner on 13 December 2010, which has been verified by the Validation Team. The validation did not reveal any information that indicates the project can be seen as a diversion of official development assistance (ODA) funding towards China. The CL is therefore closed.
CL2 The contact information in the MoC is not clearly identified. Further, the date of signatures in Section 3 are not indicated.	2.1	MOC was corrected in term of the signatures and contact information issue. And also this update was reflected in the PDD.	OK. The MoC has been corrected and provided. The CL is therefore closed.
CL3 Please refer to Section A.4.1.4 of the PDD, the windfarm layout identified the geographical coordinates of each wind turbine shall be provided and the coordinates should be transferred to 4 decimals.	4.1	It was provided.	OK. The windfarm layout has been provided. The CL is therefore closed.
CL4	5.5.1/5.5.2	$EG_{\text{facility},y}$ is equal to $EG_{\text{pj},y}$ in the case	OK.

Please refer to Section B.6.1 of the PDD, it should be clearly clarified how the EG ^{facility,y} is determined. Further, the connected electricity system is not discussed as per the <i>Tool to calculate the emission factor of an electricity system version 02.2.1.</i>		of the Project, which is supplemented in Section B.6.1 to illustrate it more clearly. The connected electricity system, Central China Power Grid is added in Section B.6.1 and B.3 for the purpose of illustration. Given that there is no electricity import of the Project electricity system from the connected system, there are no change in other sections of the PDD.	The PDD has been revised. The CL is therefore closed.
CL5 The grid connection scheme needs to be justified with supporting document.	5.3.1/5.3.2	In Page 6-4 of FSR, It is noted that “the Project adopted ‘one project with one transformer’ principle, so the Project is independently separated to other projects nearby”. A review for grid connection for the Project issued by the grid company was provided to show the grid connection progress and it will be done shortly.	OK. The validation team confirms the grid connection scheme in Figure 2 of the PDD is in line with the Preliminary opinion for the grid connection issued by the Gansu Province Power Grid Company. The CL is therefore closed.
CL6 The likelihood of varying the total investment to make the IRR reach the benchmark needs to be further assessed with the sufficient evidences.	7.3.4	The variation possibility of asset investment is further illustrated from the statistics of signed contracts. It was shown that that the purchase contracts of WTGs and most key equipments and items had been signed. Such numbers were also compared with FSR, delivering to	OK. The actual contracted cost has been summarized and compared with the FSR estimated values. The wind turbine purchase cost is only 3.12% lower than the estimated value in the FSR, while

		DOE for checking.	it is over 50% of the total static investment cost. Further, the signed contract costs contribute to 92.7% of the total static investment stated in the FSR. Considering some other expenses not occurred in this phase, such as installation of communication and control system and management expense of construction, the total static investment estimated in the FSR is deemed appropriate. The CL is therefore closed.
CL7 The further clarification is sought on the location of the main monitoring meter and who will be responsible for the data monitoring.	8.4/8.14	Section B7.2 will be altered as below in the sub-section 2. “Two bi-direction meters in the 110kV side of the substation within the wind farm are employed by the Project, one of which is for backup. Every month the 110kV substation will report the electricity exchanged between the Project and NWPG. The staffs in the operating department will be responsible for the monitoring of the electricity from and to the grid.”	OK. The monitoring plan has been revised. The CL is therefore closed.
CL8	8.15	The monitoring manual was made to	OK.

For verifying the efficiency of the training, the evidences on the training arrangement need to be provided.		include the training arrangement.	The monitoring manual is received and the training plan is documented. The CL is therefore closed.
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Table 3: List of forward action requests (FARs)**Validation / Verification Manual**

(37) The DOE shall raise a forward action request (FAR) during validation to highlight issues related to project implementation that require review during the first verification of the project activity. FARs shall not relate to the CDM requirements for registration.

FAR number	Reference	Summary of project owner response	Validation team conclusion
N/A	N/A	N/A	N/A

Appendix B

CERTIFICATES OF COMPETENCE

Qualification

Ma, Libo /

Emission Trading

United Nations Framework Convention on Climate Change

Auditor No. :
(AuditorenRegNr)

Appointed:
(Zugelassen)

☒ ja

Qualification Level: Lead 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:
(Erstberufung)

06/01/2009

Valid to:
(Gültig bis)

05/30/2015

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

2010-12-21 Beijing

GC CDM Auditor Experience Exchange, Beijing, 2010-12-21 to 23
United Nations Framework Convention on Climate Change

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:	03/20/2008 03:44:05 PM	Daxun Li/Bj/Chn/TUV
Modified:	05/03/2012 09:38:44 PM	Praveen Urs/Chn/TUV
	01/17/2011 02:43:10 PM ZE9	Manfred Brinkmann/Jpn/TUV
	01/17/2011 02:42:56 PM ZE9	Manfred Brinkmann/Jpn/TUV
	03/20/2008 03:44:19 PM	

Qualification

Wang, Guolian /

Emission Trading

United Nations Framework Convention on Climate Change

Auditor No.:

(AuditorenRegNr)

Appointed:
(Zugelassen)

☒ ja

Qualification Level: Lead Auditor
(Qualifikationsstufe)

External:
(Externer)

☐ ja

Add. reviewer: ☐ yes
(Zusätzlicher Prüfer)

EAC Scopes:
(EAC Branchen)

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

Add. qualification:
(zus. Qualifikation)

First Appointment: 2011/10/12
(Erstberufung)

Valid to: 2014/10/11
(Gültig bis)

Remarks: Valid for TA 5.1/11.1/12.1 and TA 1.2

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: 2012-02-10
Change: EAC CDM added
By: Praveen Urs
Reason:

Date: 2011-11-28
Change: EAC CDM removed; CDM added
By: Manfred Brinkmann
Reason: Valid for TA5.1/11.1/12.1

Date: 2011-10-13
Change: EAC CDM, CDM, CDM added
By: Manfred Brinkmann
Reason: Valid for TA5.1/11.1/12.1

History

Created:	2011/08/17 13:13:08	Guolian Wang/Bj/Chn/TUV
Modified:	2012/02/10 15:51:37	Praveen Urs/Chn/TUV
	2011/11/28 14:18:24 ZE9	Manfred Brinkmann/Jpn/TUV
	2011/10/13 11:45:06 ZE9	Manfred Brinkmann/Jpn/TUV
	2011/10/13 11:44:20 ZE9	Manfred Brinkmann/Jpn/TUV
	2011/08/17 13:13:27	Guolian Wang/Chn/TUV

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:

(Zusätzlicher Prüfer)

☒ yes

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:

(Erstberufung)

10/09/2010

Valid to:

(Gültig bis)

10/08/2013

Remarks:

Appointed as Technical Reviewer for TA 1.2 TA 5.1, 11.1, 12.1
and TA 4.1, 4.5, 8.2, 10.2 based on Annex D para 9 of Accreditation
Standard

Languages:

Experience Exchange

Date

Location

Remarks

Accreditation(s)

2010-12-21 Beijing

United Nations Framework Convention on Climate Change

GC CDM Auditor Experience Exchange, Beijing, 2010-12-21to23

Monitoring

Latest Monitoring:

(letzte Beurteilung)

Next Monitoring:

(nächste Beurteilung)

Remarks:

[View / Edit Monitoring](#)

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:	08/13/2010 11:19:43 AM	Cuiping Deng/Bj/Chn/TUV
Modified:	07/02/2012 03:09:41 PM	Praveen Urs/Chn/TUV
	07/02/2012 03:09:40 PM	Praveen Urs/Chn/TUV
	02/12/2012 05:35:34 PM	Praveen Urs/Chn/TUV
	02/12/2012 05:35:21 PM	
	11/11/2010 12:00:44 PM	ZE9
	11/11/2010 11:59:20 AM	ZE9
	11/11/2010 11:58:18 AM	ZE9
	08/13/2010 11:21:37 AM	