



# VALIDATION REPORT

for the CDM Project Activity

## **Inner Mongolia China Water Group Huade Sandaogou Wind Farm 49.5MW Project**

in  
**China**

Report No. 01 997 9105064983

Version No. 05, 2012-02-08

TÜV Rheinland (China) Ltd.

**I. Project description:**

**Project title:** Inner Mongolia China Water Group Huade Sandaogou Wind Farm 49.5MW Project  
**Host Country:** China  
**Methodology:** ACM0002, Version 12.2.0 ☒ Large Scale ☐ Small Scale  
**Annual average emission reductions (estimate):** 92,403 tCO<sub>2</sub>e

**GHG reducing measure/technology:**

Party	Project Participants	Party considered a project participant
China	China Water Group Huade Wind Power Co., Ltd.	No
United Kingdom of Great Britain and Northern Ireland	Eco-Tec Asia (UK) Ltd	No

**II. Validation:**

**Contract party:** Eco-Tec Asia (UK) Ltd

**Validation Team:**

Role	Full name	Appointed for Sectoral Scopes	Affiliation
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**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.: <b>01 997 9105064983</b>	Current revision No.: <b>05</b>	Date of current revision: <b>2012-02-08</b>	Date of first issue: <b>2011-08-08</b>
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Final approval:  <input checked="" type="checkbox"/>	Released on:  <b>2012-02-09</b> (By <b>Mr Praveen N Urs</b> )	Designated Operational Entity (DOE): <b>TÜV Rheinland (China) Ltd.</b> Unit 707, AVIC Building, No.10B, Central Road, East 3rd Ring Road, Chaoyang District, Beijing, CHINA 100 022 Telefax.: +86 10 6566 6660-288 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 <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
DNA	Designated National Authority
EB	Executive Board
EF	Emission Factor
EIA	Environmental Impact Assessment
ERPA	Emission Reduction Purchase Agreement
EPB	Environmental Protection Bureau
FAR	Forward Action Request
GHG	Greenhouse gas(es)
IPCC	Intergovernmental Panel on Climate Change
IRR	Internal Rate of Return
LoA	Letter of Approval
NCV	Net Calorific Value
NCPG	North China Power Grid
NDRC	National Development and Reform Commission
NGO	Non-governmental Organisation
ODA	Official Development Assistance
OM	Operating Margin
PDD	Project Design Document
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value-added Tax
VVM	Validation and Verification Manual

## Executive Summary – Validation Opinion

The Audit Team assigned by the DOE (TÜV Rheinland (China) Ltd.) has performed a validation of the “Inner Mongolia China Water Group Huade Sandaogou Wind Farm 49.5MW 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 summarize the findings of the validation.

The Validation was executed in the following steps so far:

- Project desk review PDD (Version 01, 27 May 2011)
- Public stakeholder comment process (14 June to 13 July 2011)
- On-site visit with stakeholder interviews (04 to 08 July 2011)
- Issue of checklist with corrective action requests (CARs) and clarification requests (CLs) and the draft validation report & protocol (Version 01, 08 August 2011)
- Desk review of revised PDD (Version 1.4, 07 February 2012)
- Review of proposed correction and clarifications
- Issue of the final validation report & protocol

The host country of the proposed project is P.R.China. The Letter of Approval (LoA) of voluntary participation, including confirmation by China’s DNA National Development & Reform Commission (NDRC) that the project assists them in achieving sustainable development has been received.

According to the revised PDD, the project activity is bilateral CDM-project, with United Kingdom of Great Britain and Northern Ireland identified as the Annex I party, the LoA from which has also been received.

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

The project applies approved consolidated baseline and monitoring methodology ACM0002, Version 12.2.0 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”.

And also the project applies the tools as follows:

- *“Tool for the demonstration and assessment of additionality”(Version 05.2.1)*
- *“Tool to calculate the emission factor for an electricity system” (version.02.2.1).*

By generating renewable energy from wind resources and displace grid electricity, the project results in reductions of CO<sub>2</sub> emissions that are real, measurable and give long-term benefits to the mitigation of climate change. It is demonstrated that the project is not a likely baseline scenario. Emission reductions attributable to the project are hence additional to any that would occur in the absence of the project activity.

The annual average emission reductions from the project are estimated to be 92,403 tCO<sub>2</sub>e during the fixed crediting period. The total emission reductions from the project are estimated to be on the total 924,030 tCO<sub>2</sub>e over the fixed crediting period. The emission reduction forecast has been checked and it is deemed likely that the stated amount is achieved given that the underlying assumptions do not change.

Adequate monitoring procedures have been implemented according to the monitoring methodology ACM0002, Version 12.2.0. Project operational staff's training records is available to the Audit Team.

The project proponent has resolved all Corrective Action Requests and Clarification Requests as stated in the Validation Report and the Validation Protocol, which has resulted in a revision of the PDD. In summary, it is TÜV Rheinland's opinion that the Inner Mongolia China Water Group Huade Sandaogou Wind Farm 49.5MW Project in P.R.China as described in the PDD of Version 1.4, 07 February 2012 meets all relevant UNFCCC requirements for the CDM and all relevant host country criteria and applies the baseline and monitoring methodology ACM0002, Version 12.2.0. TÜV Rheinland thus requests the registration of the Project as a CDM project activity.

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## 1 INTRODUCTION

The Eco-Tec Asia (UK) Ltd has commissioned the DOE TÜV Rheinland (China) Ltd. to perform a validation of the CDM Project Activity “Inner Mongolia China Water Group Huade Sandaogou Wind Farm 49.5MW Project” (hereafter called “the Project”) in Inner Mongolia Autonomous Region, 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” refers to Article 12 of the Kyoto Protocol, the CDM modalities and procedures and the simplified modalities and procedures for small-scale CDM project activities and the subsequent decisions by the CDM Executive Board.

### 1.1 Objective

The purpose of a validation is to have an independent third party assessing the project design. In particular, the project's baseline, monitoring plan, and the project's compliance with relevant UNFCCC and host Party criteria are validated in order to confirm that the project design, as documented, is sound and reasonable and meets the identified criteria. Validation is a requirement for all CDM projects and is seen as necessary to provide assurance to stakeholders of the quality of the project and its intended generation of certified emission reductions (CERs).

### 1.2 Scope

The validation scope is defined as an independent and objective review of the project design document (PDD). The PDD is reviewed against the relevant criteria (see above) and decisions by the CDM Executive Board, including the approved baseline and monitoring methodology. The validation team has, based on the recommendations in the Validation and Verification Manual employed a rule-based approach, focusing on the identification of significant risks for project implementation and the generation of CERs.

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

## 2 METHODOLOGY

The validation consists of the following three phases:

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

The following sections outline each step in more detail.

### 2.1 Desk Review of the Project Design Documentation

The following table outlines the documentation reviewed during the validation:

- /1/ Project Design Document for the ‘Inner Mongolia China Water Group Huade Sandaogou Wind Farm 49.5MW Project’, Version 01, 27 May 2011 and Version 1.4, 07 February 2012
- /2/ The National Development and Reform Commission of the People’s Republic of China, Host Country Letter of Approval [Ref No.: 3257], November 2011.
- /3/ Environment Agency, Letter of Approval for Eco-Tec Asia (UK) Ltd (DNA Ref: EA/Eco-Tec/06/2012), 11 January 2012.
- /4/ Modalities of Communication (MoC), 28 July 2011.
- /5/ CDM Executive Board, Consolidated baseline methodology for grid-connected electricity generation from renewable sources (ACM0002, Version 12.2.0)
- /6/ CDM Executive Board, Clean Development Mechanism Validation and Verification Manual, Version 01.2.
- /7/ CDM Executive Board, The Project Design Document Form (CDM PDD) – Version 03.
- /8/ CDM Executive Board, Guidelines for completing the project design document (CDM-PDD) and the proposed new baseline and monitoring methodologies (CDM-NM) version 07
- /9/ Feasibility Study Report (FSR) for the project completed by Inner Mongolia Power Exploration & Design Institute in February 2010 and approved by Inner Mongolia Autonomous Region Development & Reform Commission on 25 August 2010.
- /10/ Environmental Impact Assessment (EIA) for the project by Ulanqab City Environment Protection Research Institute on 26 March 2010 and approved by Inner Mongolia Autonomous Region Environment Protection Bureau on 09 July 2010.
- /11/ CDM Executive Board, Tool to calculate the emission factor for an electricity system, Version 02.2.1.
- /12/ CDM Executive Board, Tool for the demonstration and assessment of additionality, Version 05.2.1.
- /13/ CDM Executive Board, Glossary of CDM terms, Version 05, 19 Aug. 2009
- /14/ CDM Executive Board, Guidelines on the Demonstration and Assessment of Prior Consideration of the CDM, Version 04, EB62 Annex 13, 15 July 2011.
- /15/ CDM Executive Board, Guidelines on the Assessment of Investment Analysis, Version 05, EB62 Annex 5.
- /16/ CDM Executive Board, Guidelines for the reporting and validation of plant load factors, annex11 EB48.



- /17/ National Development and Reform Commission of P.R.China, Notification on Determining Baseline Emission Factor of China's Grid, 20 December 2010.
- /18/ China Electric Power Yearbook 2005 to 2009.
- /19/ China Energy Statistical Yearbook 2007 to 2009
- /20/ 2006 IPCC Guidelines for National Greenhouse Gas Inventories
- /21/ Commercial registration License of China Water Group Huade Wind Power Co., Ltd.
- /22/ IRR Calculation Sheet
- /23/ Emission Factor Calculation Spreadsheet
- /24/ Board Minutes of Investment Decision about application CDM Financing signed by the owner on 08 March 2010.
- /25/ Stakeholders Questionnaires of the project implemented by the project owner on 15 March 2010.
- /26/ Stakeholders Survey Notification made by the project owner on 08 March 2010.
- /27/ Training Manual and Plan
- /28/ Notified National Development and Reform Commission (the Host Country DNA) about the prior consideration of CDM for the project on 30 September 2010 and got the response from NDRC on 09 October 2010.
- /29/ CDM Executive Board, Notification on the prior consideration of CDM for the project, 12 October 2010.  
<http://cdm.unfccc.int/Projects/PriorCDM/notifications/index.html>
- /30/ Grid Connection Agreement signed between Inner Mongolia Power (Group) Co., Ltd. and the project owner on 26 October 2010.
- /31/ Power Tariff Approval for the Wind Power Projects in Ulanqab City issued by Inner Mongolia Autonomous Region Development & Reform Commission on 14 January 2011.
- /32/ Construction Contract of Wind Power Units Base signed between Gezhouba Group Electric Power Company Ltd. and the owner on 10 May 2010.
- /33/ Purchase and Service Contract of Tower Drum signed between China Inner Mongolia Honggang Machinery Factory and the owner on 15 May 2010.
- /34/ Purchase and Service Contract of Wind Power Units signed between Xinjiang Goldwind Science and Technology Co., Ltd. and the project owner on 20 May 2010.
- /35/ Purchase Contract of Transformer, Neutral Point and Auxiliary Facility signed between Shandong Taikai Transformer Co., Ltd. and the project owner on 08 June 2010.
- /36/ Purchase Contract for 33 Sets of Box-type Transformer and Auxiliary Facility signed between Sanbian Sci-Tech Co., Ltd. and the project owner on 08 June 2010.
- /37/ Construction Contract of Wind Power Units and Tower Drum Installation Engineering signed between China MCC17 Group Co., Ltd. and the project owner on 20 June 2010.
- /38/ Construction Contract of 35KV Line and Box-type Transformer Installation Engineering signed between Inner Mongolia Electric Power Transmission And Transformation Co., Ltd. and the project owner on 28 June 2010.
- /39/ Purchase Contract of 35 KV Reactive Compensation Devices signed between Beijing Sound-Puhua Tech. Co., Ltd. and the project owner on 10 July 2010.
- /40/ Roads Construction Contract of Access to the site and Inner Site for

- Sandaogou, Heping and Liujiacun projects signed between Inner Mongolia No.3 Construction Engineering Co., Ltd. and the project owner on 20 April 2010.
- /41/ 35KV High Voltage Switch Purchase Contract for Sandaogou, Heping and Liujiacun projects signed between Jiangsu Dongyuan Electrical Co., Ltd. and the project owner on 20 June 2010.
- /42/ Construction Contract of Reconstruction Grounding Grid for Sandaogou, Heping and Liujiacun projects signed between Shenyang Oudian Wind Power Grounding Grid Technology Co., Ltd. and the project owner on 20 June 2010.
- /43/ 220KV Alternating High Voltage Circuit Breaker, Disconnect Switch, Current Transformer, Lightning Rod Purchase Contract for Sandaogou, Heping and Liujiacun projects signed between Xi'an Xidian Switchgear Electric Co., Ltd. and the project owner on 20 June 2010.
- /44/ Cable Purchase Contract for Sandaogou, Heping and Liujiacun projects signed between Jiangsu Shangshang Cable Group and the project owner on 30 June 2010.
- /45/ Main Transformer Protection Device Purchase Contract for Sandaogou, Heping and Liujiacun projects signed between Nari-Relays Electric Co., Ltd. and the project owner on 30 July 2010.
- /46/ Main Transformer Protection Device Purchase Contract for Sandaogou, Heping and Liujiacun projects signed between Xuji Electric Co., Ltd. and the project owner on 13 July 2010.
- /47/ Computer Monitor-Control System Purchase Contract for Sandaogou, Heping and Liujiacun projects signed between Guodian Nanjing Automation Co., Ltd. and the project owner on 13 July 2010.
- /48/ Construction Contract of Substation Retrofit Engineering for Sandaogou, Heping and Liujiacun projects signed between Inner Mongolia Electric Power Transmission and Transformation Co., Ltd. and the project owner on 15 July 2010.
- /49/ Accessory Cable Purchase Contract for Sandaogou, Heping and Liujiacun projects signed between Jilin Jifu New-Material Co., Ltd. and the project owner on 23 August 2010.
- /50/ 35KV Main Transformer Neutral Point Resistance Cable Purchase Contract for Sandaogou, Heping and Liujiacun projects signed between Baoding Tianwei Hengtong Electric Co., Ltd. and the project owner on 23 August 2010.
- /51/ Renminbi Fund Syndicated Loan Contract for Sandaogou, Heping and Liujiacun projects signed between Three Gorge Financial Co., Ltd. and the project owner on 08 December 2010.
- /52/ National Development and Reform Commission and the Ministry of Construction, the Economic Assessment Method and Parameters for Construction Projects, Version 03, Jul. 2006
- /53/ Enterprise Incoming Tax Law of People's Republic of China
- /54/ Ministry of Finance P.R.China & State Administration of Taxation, Notice on Value Added Tax Policy Regarding Resource Multiutilization and Other Products, 24 June 2003
- /55/ The State Council, Decision on Revising the "Temporary Regulation on the Education Added Tax", 20 Aug. 2005.
- /56/ The State Council, Temporary Regulation on the City Construction Tax, 8 Feb.

- 1985.
- /57/ State Power Corporation of China. Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects. China Electric Power Press, 2003
  - /58/ National Development and Reform Commission, Benchmark electricity price for grid-connected wind power, 01 August 2009.
  - /59/ Wind Power Tariff Approval issued by NDRC (NDRC tariff [2007]No.3303) on 3 December 2007
  - /60/ Wind Power Tariff Approval issued by NDRC (NDRC tariff [2008]No.1876) on 23 July 2008
  - /61/ Notice on Wind Power Construction and Management (Ref No.: FaGaiNengYuan [2005] No. 1204), NDRC of China, 4<sup>th</sup> Jul. 2005.
  - /62/ Historical interest rates published by the People's Bank of China  
[http://www.dkfx.cn/html/tools/loan\\_rate\\_table.html#anchor\\_03](http://www.dkfx.cn/html/tools/loan_rate_table.html#anchor_03)
  - /63/ NDRC, State Council approved the reformation of China power system in April 2002 for "Separate power plants from network and compete in price to enter network" [http://www.ndrc.gov.cn/xwfb/t20050708\\_28096.htm](http://www.ndrc.gov.cn/xwfb/t20050708_28096.htm)
  - /64/ New 592 key counties list for National Poverty Alleviation and Development, issued by The State Council Leading Group Office of Poverty Alleviation and Development on Nov. 19<sup>th</sup>, 2006.  
[http://www.cpad.gov.cn/data/2006/1119/article\\_331579.htm](http://www.cpad.gov.cn/data/2006/1119/article_331579.htm)
  - /65/ Statistical Communiqué on Labor and Social Security Undertakings National Economic and Social Development issued by National Bureau of Statistics of China <http://www.stats.gov.cn/english/StatisticalCommuniques/>
  - /66/ Technical administrative code of electric energy metering (DL/T 448-2000)
  - /67/ European Wind Energy Association, Wind Energy\_the Facts, 13 February 2009. <http://www.wind-energy-the-facts.org/en/downloads.html>
  - /68/ State Administration of Taxation, Notification on the execution method of adjustment of residual value rate of fixed asset for enterprises, 14 September 2005
  - /69/ Implementation Rules of the Enterprise Income Tax Law, Promulgated by Decree No. 512 of the State Council of the People's Republic of China on 6 December 2007, effective on 1 January 2008.
  - /70/ General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China, Methodology of Wind Energy Resource Assessment for Wind Farm ((GB/T 18710-2002), 28 April 2002
  - /71/ NDRC, Compilation Method for Feasibility Study Report of Wind Power Projects (No: NDRC Energy [2005] 899), 9 May 2005.
  - /72/ Ministry of Finance and the State Administration of Taxation, Notice about Policies Regarding the Value Added Tax on Comprehensive Utilization of Resources and Other Products" (Caishui [2008] 156), 09 December 2008.
  - /73/ Ministry of Finance P.R.China & State Administration of Taxation, Notice on Value Added Tax Reform in the Whole Country (Cai Shui [2008] 170), effective on 1 January 2009.
  - /74/ Statistics of Windfarm Installed Capacities in China 2007, 2008 and 2009, Chinese Wind Energy Association  
[http://www.cwea.org.cn/download/display\\_list.asp?cid=2](http://www.cwea.org.cn/download/display_list.asp?cid=2)
  - /75/ National Debt Fund 30MW Project in Keshiketeng Banner," December 22, 2008, July 14, 2009 <<http://www.chifeng.gov.cn/html/2008-11/3130.shtml>>.
  - /76/ <https://gs1.apx.com/mymodule/ProjectDoc/EditProjectDoc.asp?id1=449>

- /77/ <https://gs1.apx.com/mymodule/ProjectDoc/EditProjectDoc.asp?id1=505>
- /78/ <https://gs1.apx.com/mymodule/ProjectDoc/EditProjectDoc.asp?id1=620>
- /79/ A Further Consulting Email for specific data source or evidences of received general comments to the commenter [zhongzhouli8@gmail.com](mailto:zhongzhouli8@gmail.com) by the validation team, dated 04/08/2011
- /80/ Statement of Wind Turbine Geographical Coordinates issued by China Water Group Huade Wind Power Co., Ltd.
- /81/ 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
- /82/ 1. Technical agreement of main transformer for the Changshun Phase I wind farm signed between Shandong Taikai Transformer Co., Ltd. and the project owner in Jan. 2009;
2. Technical agreement of main transformer for the Sandaogou wind farm signed between Shandong Taikai Transformer Co., Ltd. and the project owner in Jun. 2010;
3. Technical agreement of main transformer for the Heping and Niujiacun wind farms signed between and Shandong Dachi Electric Co., Ltd. and the project owner in Jun. 2010;
4. Technical agreement of main transformer for the Niujiatangzi and Sitaifangzi wind farms signed between and Shandong Dachi Electric Co., Ltd. and the project owner in Apr. 2011;
5. Technical agreement of main transformer for the Erligetu and Cheliwusu wind farms signed between Shandong Dachi Electric Co., Ltd., and the project owner in Apr. 2011;

Herewith, the Validation Team summarizes major changes between webhosted PDD and final version of PDD for submission as follows:

<b>Subject</b>	<b>Webhosted PDD</b>	<b>Correction to webhosted PDD in the final PDD submission for registration with DOE acceptance.</b>
Methodologies	ACM0002, Version 12.1.0	ACM0002, Version 12.2.0 The veriosn 12.2.0 has been available since 25 November 2011, the PPs updated to version 12.2.0 voluntarily.
CER calculations	92,403 tCO <sub>2</sub> e	92,403 tCO <sub>2</sub> e
Additionality	1. The starting date: 10 May 2010 2. IRR value: 6.23%	1. The starting date: 20 April 2010 (please see CAR 3) 2. IRR value: 5.52% (please see CAR 4)
Monitoring	Monitoring Plan	Please see CAR 5
Crediting period	01 January 2012 ~ 31 December 2021	01 March 2012 ~ 28 February 2022

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. FAR were further issued to the DOE verification team to check the implementation and operational completeness during the first verification.

## 2.2 Follow-up Interviews with Project Stakeholders

	Date	Name	Organization	Topic
/I/	05~06 July 2011	Gao Jinsong Wang Lixin	China Water Group Huade Wind Power Co., Ltd.	<ul style="list-style-type: none"> <li>– Project Management</li> <li>– Technical issues</li> <li>– Approval status by the host country</li> <li>– Sustainable development issues</li> <li>– Investment risks and barriers</li> <li>– Additionality</li> <li>– Monitoring plan</li> <li>– Training plan</li> <li>– Environmental impacts</li> <li>– Stakeholder process</li> <li>– Financial source</li> <li>– CDM incentive consideration</li> </ul>
/II/	06 July 2011	Zhu Tao	Chaoyang Town	<ul style="list-style-type: none"> <li>– Benefits from the Project</li> <li>– Impact of the Project on local environment</li> </ul>
/III/	06 July 2011	Xing Aibing	Development and Reform Bureau of Huade County	<ul style="list-style-type: none"> <li>– Local present situation of Windpower.</li> <li>– The authority and procedure of projects</li> <li>– The state's industry policy.</li> <li>– Assessment for the feasibility of the project</li> </ul>
/IV/	06 July 2011	He Chengbing	Environment Protection Bureau of Huade County	<ul style="list-style-type: none"> <li>– EIA application procedure.</li> <li>– Positive or negative impact brought by the Project</li> <li>– Environmental impacts during project construction and protection measures applied</li> </ul>

/V/	06~07 July 2011	Ruan Yizhou	Three Gorges Finance Co., Ltd.	– Project investment Assessment
				– Loan application procedure
/VI/	04~07 July 2011	Wu Xin Zhao Qian	Eco-Tec Asia (UK) Ltd	– Financial risk assessment
				– Assessment for the feasibility of the project
				– Project design document
				– Baseline determination
				– Emission reductions calculation
				– Project additionality
				– Status of LoAs

The validation team carried the on site visit on 4-8 July 2011, which is prior to the date of GSP closure (i.e. 13 July 2011). Considering the validation work is carried out during the public stakeholder comment process, it is possible to receive comments from global stakeholders and the response from project participant for received comments should be validated during follow-up interviews. Thus the team signed a confirmation Letter with the project participant to confirm that in case of any negative comments arise and some or all of them were not addressed during site visit, the validation team would go for a second site visit. Public comments were received on 14 June 2011 which is before site visit, all the relevant comments were addressed during site visit. Thus, no second site visit is necessary. Details please refer to section 3.10 of the FVR.

## 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 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 two tables. The different columns in these tables are described in the figure below. The completed validation protocol for this project is enclosed in Appendix A to this report.

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

- 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.



<b>Validation Protocol Table 1: Validation Requirement</b>				
<b>Checklist Question</b>	<b>Reference</b>	<b>Means of verification (MoV)</b>	<b>Comment</b>	<b>Draft and/or Final Conclusion</b>
<i>The various requirements in Table 1 are linked to checklist questions the project should meet. The checklist is organised in different sections, following the logic of the large-scale PDD template, version 03 - in effect as of: 28 July 2006. Each section is then further sub-divided.</i>	<i>Gives reference to documents where the answer to the checklist question or item is found.</i>	<i>Explains how conformance with the checklist question is investigated. Examples of means of verification are document review (DR) or interview (I). N/A means not applicable.</i>	<i>The section is used to elaborate and discuss the checklist question and/or the conformance to the question. It is further used to explain the conclusions reached.</i>	<i>This is either acceptable based on evidence provided (<b>OK</b>), or a <b>corrective action request (CAR)</b> due to non-compliance with the checklist question (See below). A request for clarification (CL) is used when the validation team has identified a need for further clarification.</i>

<b>Validation Protocol Table 2: List of Requests for Corrective Action (CAR) and Clarification (CL)</b>			
<b>Draft report clarifications and corrective action requests</b>	<b>Ref. to checklist question in table 1</b>	<b>Summary of project owner response</b>	<b>Validation conclusion</b>
<i>If the conclusions from the draft Validation are either a CAR or a CL, these should be listed in this section.</i>	<i>Reference to the checklist question number in Table 1 where the CAR or CL is explained.</i>	<i>The responses given by the project participants during the communications with the validation team should be summarised in this section.</i>	<i>This section should summarise the validation team's responses and final conclusions. The conclusions should also be included in Table 1, under "Final Conclusion".</i>

**Figure 1. Validation protocol tables**

## 2.4 Internal Quality Control

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

## 2.5 Validation Team

Role	Full Name	Appointed for Sectoral Scopes	Affiliation
Team Leader	Mr. Tan Yi	1.2, 13.1	TÜV Rheinland (China) Co., Ltd.
Trainee	Mr. Wu Ze		TÜV Rheinland (Shanghai) Co., Ltd.
Technical Reviewer	Ms. Deng Cuiping	1.1, 5.1, 11.1, 12.1	TÜV Rheinland (China) Co., Ltd.

## 3 VALIDATION FINDINGS

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

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

### 3.1 Approval and Participation

The below table summarizes the project participants and parties involved. The authenticity of the letter of approval from host country has been validated by checking on Chinese DNA's website. The authenticity of the letter of approval from Annex I country United Kingdom of Great Britain and Northern Ireland has been checked by making a comparison to the LoA issued by Environment Agency, to the latest registered CDM project. These LoA(s) are regarded as valid and meeting the requirements.

<b>Project participants</b>	<i>1. China Water Group Huade Wind Power Co., Ltd.</i>	<i>2. Eco-Tec Asia (UK) Ltd</i>
<b>Parties involved</b>	<i>P.R.China (host)</i>	<i>United Kingdom of Great Britain and Northern Ireland</i>
<b>Ratification status of the parties</b>	<i>China ratified the Kyoto Protocol on 30 August 2002.</i>	<i>United Kingdom of Great Britain and Northern Ireland, the Annex I party, ratified the Kyoto Protocol on 31 May 2002.</i>
<b>APPROVAL</b>		
LoA received	Yes	Yes

Date of LoA	<i>November 2011</i>	11 January 2012
Reference to document	<i>Ref No.:3257 /2/</i>	DNA Ref: EA/Eco-Tec/06/2012 /3/
LoA received from	<i>The project participants</i>	<i>The project participants</i>
Validation of authenticity	<p><i>All approved CDM projects by DNA of China NDRC will be published on: 'http://cdm.ccchina.gov.cn/'.</i></p> <p><i>The Project is indicated as approved by China DNA, source: 'http://cdm.ccchina.gov.cn/website/CDM/pdf/Item_new/Item_new6931.pdf'</i></p>	<p><i>The Audit Team confirmed the validity of the LoA by referring to the website of the UK DNA where all approved projects are listed.</i></p> <p><i>http://www.environment-agency.gov.uk/static/documents/Business/CDM_approved_projects.pdf</i></p>
Validity of LoA	<i>Valid</i>	Valid
<b>PARTICIPATION</b>		
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	Yes	N/A

The Modalities of Communications (MoC) /4/ of the Project has been received by the Audit Team and it was confirmed that the MoC was signed on 28 July 2011 according to the Modalities of Communication Form (F-CDM-MOC) Version 01.4, which is valid at the time of the MoC being issued. The validation team has contacted each authorized representatives of the project participants as indicated in the MoC by email and it has been confirmed that the contact details and signatory are authorized and credible.

The Audit Team checked the Loan Contract /51/ signed with Three Gorge Financial Co., Ltd. on 08 December 2010 and confirmed that 64.3% of total investment was sourced from domestic bank loan and the rest was sourced from self-owned equity. No public funding from an Annex I Party is involved in the project and the Audit Team did not reveal any information that indicates that the project can be seen as a diversion of official development assistance (ODA) funding towards China.

### 3.2 Project Design Document

The Project Design Document is based on the currently valid PDD template /7/ and is completed in accordance with the applicable guidance document /8/.

### 3.3 Project Description

Inner Mongolia China Water Group Huade Sandaogou Wind Farm 49.5MW Project is developed by China Water Group Huade Wind Power Co., Ltd. The project is a grid connected renewable power generation project located in Changshun Town, Huade County, Ulanqab City, Inner Mongolia Autonomous Region, People's Republic of China, the geographical coordinates is east longitude 113.8712°E ~ 113.9154°, north latitude 41.8354°N ~ 41.8975°.

Totally 33 sets of 1,500 kW wind turbines will be installed, with a total capacity of 49.5 MW and an average generation of 99,263 MWh annually connected into North China Power Grid (NCPG). The key type and parameter of key equipment have been confirmed by the Audit Team with equipment purchase contract /33//34/, and the detailed information is as follows:

Parameters		Value
Wind Turbine /34/	Manufacturer / Type	Xinjiang Goldwind Technology Co., Ltd. GW77/1500kW
	Life Time (Year)	20
	Annual Operation Hours (Hours)	2005
	Plant Load Factor (PLF)	0.23
	Diameter (m)	77
	Rated Capacity (kW)	1500
	Cut-in Wind Speed (m/s)	3
	Rated Wind Speed (m/s)	12
	Cut-out Wind Speed (m/s)	22
	Operation Temperature(°C)	-30°C ~ +40°C
	Type	variable blade
	Swept Area (m <sup>2</sup> )	4656
Generator /34/	Type	Direct-drive permanent magnet synchronous generator
	Capacity (kW)	1580
	Rated Voltage (V)	690
	Rated Current (A)	660
	Power factor	0.95 (inductor) ~ 0.95 (capacitor)
Braking System /34/	Main Braking System	pneumatic brake
	Second Braking System	Mechanical brake
Tower /33/	Type	cone

	Hub Height (m)	62.8
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In the absence of the project, the electricity would be supplied by the North China Power Grid which is mainly composed of fossil-fuel power plants, and it is also the baseline scenario.

The proposed project will achieve CO<sub>2</sub> emission reduction by displacing fuel-fired based grid power generation with renewable hydro energy. The annual emission reduction of the proposed project is estimated to be 92,403 tCO<sub>2</sub>e.

As per the definition of starting date of a CDM project activity from the Glossary of CDM terms /13/, the date of Roads Construction Contract of Access to the site and Inner Site for Sandaogou, Heping and Liujiacun projects /40/ being signed, which is the earliest date at which the real action of a project activity begins and the project participant has committed to expenditures related to the implementation or related to the construction of the Project. Therefore, the Project's starting date is 20 April 2010, As per the FSR /9/, the expected lifetime is 21 years, which includes 20 years operation lifetime and 1 year construction period. The expected starting date of crediting period is on 01 March 2012, and a fixed crediting period of 10 years was chosen.

<i>Starting date of project</i>	<i>Expected project operational lifetime</i>	<i>Crediting period</i>
<i>20 April 2010</i>	<i>21 Years as applied in the financial analysis (including 1 year construction period)</i>	<i>10 Years (from 01/03/2012 to 28/02/2022)</i>

The training records /27/ have been provided by the project proponent and reviewed by the audit team.

In Audit Team's opinion, the project description is accurate and complete in the PDD, Version 1.4, 07 February 2012.

### 3.4 Baseline and Monitoring Methodology

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

The project activity involves electricity generation for a grid through wind sources where the total output capacity is 49MW. It applies the *ACM0002, Version 12.2.0* "Consolidated baseline methodology for grid-connected electricity generation from renewable sources connected renewable electricity generation" /5/. The approved methodology is also in connection with the methodological tool i.e. "Tool to calculate the emission factor for an electricity system, version 02.2.1" /11/ and "Tool for the demonstration and assessment of additionality, Version 05.2.1" /12/.

The compliance of the Project is presented as follows:

The Project is a greenfield wind power plant, the electricity generated is to be supplied to NCPG, and the project don't involve switching from fossil fuels

The Audit Team verified and confirmed the project activity meets each of the applicability conditions of the Methodology and the tools.

### 3.4.2 Project Boundary

The grid system boundary includes the physical site of the project activity and all the power plants connected to NCPG. The Audit Team has reviewed the Notification on Determining Baseline Emission Factor of China's Grid /17/, issued by China DNA on 20 December 2010, and confirmed that Inner Mongolia Grid is part of NCPG, which includes the Beijing, Tianjin, Hebei, Inner Mongolia, Shandong and Shanxi power grids. The NCPG is dominated by coal-fired power plants according to the China Electric Power Yearbook 2005~2009 /18/. It is deemed likely that development of renewable energy power plants will not have significant effects on the delineation of the grids in China during the crediting period.

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

	<b>GHGs involved</b>	<b>Description</b>
<b>Baseline emissions</b>	CO <sub>2</sub>	CO <sub>2</sub> is the main emission source from fossil fired power plants in NCPG.
<b>Project emissions</b>	Not involved	According to <i>ACM0002, Version 12.2.0</i> , the project emission is considered to be zero.
<b>Leakage</b>	Not involved	According to <i>ACM0002, Version 12.2.0</i> , the Leakage of wind power project activity is Neglected

There isn't the project activity's GHG emissions which will contribute more than 1% of the expected ER/year and which are not addressed in the applied methodology.

### 3.4.3 Baseline Identification

The Project is the installation of a new grid-connected renewable power plant, according to the methodology *ACM0002, Version 12.2.0 /5/*, the baseline scenario is the following: Electricity delivered to the grid by the Project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources within NCPG, as reflected in the combined margin (CM) calculations described in the "Tool to calculate the emission factor for an electricity system" /11/.

<i>The approved baseline methodology applicable to the project</i> <ul style="list-style-type: none"> <li>- <i>explicit criteria</i></li> <li>- <i>implicit criteria (e.g. available scenarios, applicability of formulas for BE/PE/LE calculations)</i></li> </ul>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	As discussed in Section 3.4.1, the compliance of the methodology has been justified in the PDD and verified by the Audit Team.
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<i>PDD includes all assumptions and data used by project participants</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The PDD includes all assumptions and data in accordance with ACM0002, Version 12.2.0 /5/ and the “Tool to calculate the emission factor for an electricity system” Version 02.2.1 /11/.
<i>All the references and documents used are relevant for establishing the baseline scenario</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	China Electric Power Yearbook 2005 – 2009 /18/, China Energy Statistical Yearbook 2007 – 2009 /19/ and China DNA's Notification on Determining Baseline Emission Factors of China Power Grid /17/ are relevant for establishing the baseline scenario according to ACM0002, Version 12.2.0/5/ and the “Tool to calculate the emission factor for an electricity system” Version 02.2.1 /11/.
<i>All the references and documents used are correctly quoted and conservatively interpreted in the PDD</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All the references and documents are confirmed to be correctly quoted and conservatively interpreted in the Section A.2, Section B.4 and Section B.6 of the PDD.
<i>All relevant policies / regulations considered are listed in the PDD</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All relevant policies / regulations considered are confirmed to be listed in the PDD as per ACM0002, Version 12.2.0 /5/ and China DNA's Notification on Determining Baseline Emission Factors of China Power Grid on 20 December 2010 /17/.
<i>Identified potential baseline scenarios reasonably represent what would/could occur in the absence of the proposed project activity</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	No other baseline scenarios need to be considered according to ACM0002, Version 12.2.0 /5/.
<i>The baseline scenario selection is appropriate and determined according to the methodology</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Baseline scenario is regulated by the methodology and appropriately applied in the PDD.
<i>The approved methodology used is applicable to the identified baseline scenario</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Yes.

In the Audit Team's opinion, the baseline scenario is determined according to the methodology and is reasonable.

### 3.4.4 GHG Emission Reductions

The GHG emission reductions calculation is based on the methodology ACM0002, Version 12.2.0 /5/ “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”.

### **Baseline emissions**

As discussed in the section 3.4.1 above, the project activity is confirmed by the validation team to be the installation of a new grid-connected renewable wind power plant at a site where no renewable power plant was operated prior to the implementation of the project activity. According to the applied methodology *ACM0002, Version 12.2.0 /5/*, the baseline emissions of the project include only CO<sub>2</sub> emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. In addition, assuming that all project electricity generation above baseline level would have been generated by existing grid-connected power plants and the addition of new grid-connected power plants, the baseline emission of the project is thus appropriately calculated as below,

$$BE_y = EG_{\text{facility},y} \bullet EF_{\text{grid,CM},y}$$

Where,

$BE_y$  = Baseline emissions in year y (tCO<sub>2</sub>/yr)

$EG_{PJ,y}$  = Quantity of net electricity generation supplied by the project plant to the grid in year y (MWh/yr)

$EF_{\text{grid,CM},y}$  = Combined margin CO<sub>2</sub> emission factor for grid-connected power generation in year y calculated using the latest version of the “Tool to calculate the emission factor for an electricity system” (tCO<sub>2</sub>/MWh)

### **Emission Factor**

According to the “Tool to calculate the emission factor for an electricity system” (Version 02.2.1) /11/, the combined grid emission factor of the project as of 0.9309tCO<sub>2</sub>e/MWh was assessed by the validation team as follows:

1) The electricity generated by the project would be supplied to the NCPG. In accordance with the delineation of power grids, i.e. Guidance for the determination of grid boundaries and emission factors issued by NDRC of China on 20 Dec. 2010 /17/, the power plants physically connected to the NCPG can be dispatched without significant transmission constraints. Thus, the NCPG is identified as the project electricity system of the project;

2) The energy consumption data of power generation in 2009 was available from China Energy Statistic Yearbook 2010, which was published in January 2011; and the power generation data in 2009 was available from China Electric Power Yearbook 2010, which was published in December 2010. Even if the two Yearbooks (i.e. China Energy Statistic Yearbook 2010 and China Electric Power Yearbook 2010) were available before the date of PDD for GSP. But the electricity exchange between power grids and power supply efficiency of coal-fired, oil-fired and gas-fired in 2009 were not available at that time. Thus, the Audit Team confirmed that the completed data source in 2009 is not available for EF calculation. Therefore, the EF based on China Electric Power Yearbook and China Energy Statistics Yearbook 2007 – 2009 /18//19/ is reasonable and conservative.

3) The calculation of the Operating Margin (OM) in the PDD is assessed as follows:



- the simple OM emission factor calculation method is appropriately selected because low cost/must run projects constitute less than 50% of the total grid generation of the NCPG from 2004 to 2008 /18/;
- a 3-year generation-weighted average, based on the most recent available date at the time of commencement of validation (i.e. 14 Jun. 2011), is properly used. Those applied data are derived from the China Energy Statistics Yearbook 2007 to 2009 /19/, China Electric Power Yearbook 2005 to 2009 /18/ and 2006 IPCC Guidelines for National Greenhouse Gas Inventories /20/;
- the Option B is properly selected for calculation of the simple OM since the data on fuel consumption and net electricity generation of each power plant/unit is not publicly available in China;
- the calculation of the OM is correctly conducted using the Equation (3) in the PDD, which is exactly the same as the Equation (1) stipulated in the "Tool to calculate the emission factor for an electricity system" (Version 02.2.1.). The data and parameters used are appropriately derived from the data sources /17//18//19//20/.

As a result, the validation team confirmed that the OM emission factor calculated as 0.9914tCO<sub>2</sub>e/MWh in the PDD fully complies with the Tool to calculate the emission factor for an electricity system.

4) The calculation of the Build Margin (BM) in the PDD is assessed as follows:

- because plant specific fuel consumption and electricity generation data is not publicly available in China, the approved deviation of the baseline methodology of AM0005 is appropriately applied in the PDD;
- the cohort of power units necessary of the BM calculation has been properly selected in the PDD according to the above deviation. The installed capacity addition from year 2006 to 2008 was selected as it stands for 26.15% of the total installed capacity of year 2008, which satisfies the specification of over 20% in the Tool to calculate the emission factor for an electricity system;
- the BM emission factor is ex-ante calculated and the Equations (4) – (9) used to calculate the BM emission factor in the PDD has been applied correctly as per the above approved deviation and the "Tool to calculate the emission factor for an electricity system". The data and parameters used are appropriately derived from the data sources/17//18//19//20/.

As a result, the validation team confirmed that the BM emission factor calculated as 0.7495tCO<sub>2</sub>e/MWh in the PDD fully complies with the Tool to calculate the emission factor for an electricity system.

5) The validation team confirmed that the Combined Margin (CM) is calculated correctly as follows:

- the default weights of 75% OM and 25% BM for the project have been correctly selected and the Equation (10) in the PDD is properly applied in the PDD in accordance with the "Tool to calculate the emission factor for an electricity system".

In conclusion, the validation can confirm that the CM of the project is appropriately calculated as 0.9309tCO<sub>2</sub>e/MWh in the PDD /1/ based on the most recent data available at the time of submission of the CDM-PDD to the DOE for validation (i.e. 27 May 2011).

### **Project emissions**

The proposed project is a greenfield windpower project. The project emission is zero under ACM0002, Version 12.2.0 (PEy=0)

### **Leakage**

The Audit Team can confirm the selection of leakage as zero is in accordance with the applied methodology (Ly=0).

In summary, the GHG emissions calculations are transparently documented and appropriate assumptions regarding expected amount of electricity output and import have been used to forecast emission reductions. A conservative and appropriate approach has been adopted in both the prediction of baseline emissions and project emissions.

<i>All assumptions made for estimating GHG are listed in the PDD</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All the assumptions made for estimating GHG have been confirmed listed in the PDD Section B.6. The main assumptions are in line with project situation in PDR, the methodology and the Notification on Determining Baseline Emission Factors of China Power Grid, which is published on China DNA's official website since 20 December 2010.
<i>All data used by project participants are listed in the PDD</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All data used by the project participants have been confirmed listed according to the PDR of the project, Tool to calculate the emission factor for an electricity system (version 02.2.1) and relevant China DNA's Guidance.
<i>Their references and sources are also listed in the PDD</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The references and sources have been confirmed listed in the PDD Section B.6 and Annex 3 Baseline Information.
<i>Formulas, parameters, values are complete, accurate, transparent and conservative</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Formulas, parameters, values have been confirmed completely, accurately, transparently and conservatively documented in the PDD Section B.6 and Annex 3 Baseline Information according to the PDR of the project, the Tool to calculate the emission factor for an electricity system

		(version 02.2.1) and relevant China DNA's Guidance.
<i>All the references and documents used are correctly quoted and conservatively interpreted in the PDD</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All the references and documents used have been correctly quoted and conservatively interpreted in the PDD Section B.6 and Annex 3 Baseline Information according to the PDR of the project, the Tool to calculate the emission factor for an electricity system (version 02.2.1) and relevant China DNA's Guidance.
<i>Methodology has been applied correctly to calculate project emissions, baseline emissions, leakage emissions and emission reductions</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	The methodology (i.e. ACM0002, Version 12.2.0) has been correctly applied to calculate project emissions, baseline emissions leakage emissions and emission reductions. Please also see above descriptions in this section.
<i>All the emissions of baseline emissions can be replicated using information provided in the PDD</i>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	All the emissions of baseline emissions can be replicated by multiplying the annual net electricity supplied to the grid (i.e. 99,263 MWh) by the CO <sub>2</sub> emission factor of NCPG (i.e. 0.9309 tCO <sub>2</sub> e/MWh). The baseline emissions calculation is thus calculated as 92,403 tCO <sub>2</sub> e per year.

### 3.5 Additionality

The additionality of the project is demonstrated by applying "Tool for the demonstration and assessment of additionality, Version 05.2.1."

#### 3.5.1 CDM consideration

As per Glossary of CDM terms /13/, the starting date of a CDM project activity is the earliest date at which either the implementation or construction or real action of a project activity begins. The implementation or construction or real actions of the project are as follows:

Date	Key Events	Reference
20 April 2010	Roads Construction Contract of Access to the site and Inner Site for Sandaogou, Heping and Liujiacun projects	/40/
10 May 2010	Construction Contract of Wind Power Units Base	/32/
15 May 2010	Purchase and Service Contract of Tower Drum	/33/
20 May 2010	Purchase and Service Contract of Wind Power Units	/34/
08 June 2010	Purchase Contract of Transformer, Neutral Point and Auxiliary Facility	/35/
08 June 2010	Purchase Contract for 33 Sets of Box-type Transformer and	/36/

	Auxiliary Facility	
20 June 2010	Construction Contract of Wind Power Units and Tower Drum Installation Engineering	/37/
20 June 2010	35KV High Voltage Switch Purchase Contract for Sandaogou, Heping and Liujiacun projects	/41/
20 June 2010	Construction Contract of Reconstruction Grounding Grid for Sandaogou, Heping and Liujiacun projects	/42/
20 June 2010	220KV Alternating High Voltage Circuit Breaker, Disconnect Switch, Current Transformer, Lightning Rod Purchase Contract for Sandaogou, Heping and Liujiacun projects	/43/
28 June 2010	Construction Contract of 35KV Line and Box-type Transformer Installation Engineering	/38/
30 June 2010	Cable Purchase Contract for Sandaogou, Heping and Liujiacun projects	/44/
10 July 2010	Purchase Contract of 35 KV Reactive Compensation Devices	/39/
13 July 2010	Main Transformer Protection Device Purchase Contract for Sandaogou, Heping and Liujiacun projects	
13 July 2010	Computer Monitor-Control System Purchase Contract for Sandaogou, Heping and Liujiacun projects	
15 July 2010	Construction Contract of Substation Retrofit Engineering for Sandaogou, Heping and Liujiacun projects	
30 July 2010	Main Transformer Protection Device Purchase Contract for Sandaogou, Heping and Liujiacun projects	/45/
23 August 2010	Accessory Cable Purchase Contract for Sandaogou, Heping and Liujiacun projects	/49/
23 August 2010	35KV Main Transformer Neutral Point Resistance Cable Purchase Contract for Sandaogou, Heping and Liujiacun projects	/50/

20 April 2010 is considered to be the earliest date of project real action since the cost of construction constitute significantly of the project investment.

The project owner notified NDRC on prior consideration of CDM for the project on 30 September 2010 and received the notification from NDRC on 09 October 2010 /28/. Moreover, the project owner notified UNFCCC Secretariat on 12 October 2010 /29/.

<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>
20 April 2010	Roads Construction Contract	Notified NDRC on prior

	of Access to the site and Inner Site for Sandaogou, Heping and Liujiacun projects /40/	consideration of CDM for the project on 30 September 2010 and received the notification from NDRC on 09 October 2010 /28/. Notified UNFCCC Secretariat on 12 October 2010 /29/.
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The PPs informed the host DNA and UNFCCC Secretariat. Moreover, such notification has been made within six months of the project activity starting date. The Audit Team confirmed that the CDM was seriously considered in the decision to implement the project activity as per *Guideline on the Demonstration and Assessment of Prior Consideration of the CDM (Annex 13, EB62)/14/*.

### 3.5.2 Alternatives

The project activity is based on the methodology *ACM0002, Version 12.2.0*, in which the baseline scenario has been prescribed for Greenfield projects. As per article 105 VVM /6/, no further alternative analysis is required.

### 3.5.3 Investment analysis

A benchmark analysis (Option III of Step 2 of tool for the demonstration and assessment of additionality) is selected for conducting the investment analysis. In China an IRR of 8% for the total investment of a project is regarded as a benchmark for investments in large scale hydropower plants, fossil fuel fired plants and wind farm projects /57/. This benchmark is deemed appropriate for this project. All input parameters used for investment analysis in the PDD are taken from the approved Feasibility Study Report (FSR) /9/, based on the data of which the project IRR without CER revenues accounts to 5.52% /22/, which indicates that the project in the absence of CDM benefits is not financially attractive due to its lower than the benchmark of 8% /57/.

The validation processes of the investment analysis are conducted in the following steps.

#### 3.5.3.1 Choice of approach

Since the proposed project generates financial and economic benefits through the sales of electricity, a simple cost analysis (option I) can not be applied. Secondly, the alternative (d) to the proposed project is not a similar investment project, so an investment comparison analysis (option II) is also not an appropriate choice. Thus the benchmark analysis (option III) has been applied for conducting the investment analysis as per the Guidance on the Assessment of Investment Analysis (Version 05) /15/.

#### 3.5.3.2 Justification of benchmark selection

The Audit Team has reviewed the source of the economic benchmark for the project investment analysis used by the project participant and confirmed that it is the valid authoritative reference – “Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects” by the State Power Corporation of China /57/. As highlighted in section 1.11 of the reference document, it indicates that the project IRR of 8% is the benchmark used for

the investments in hydropower plants, fossil fuel fired plants and wind farm projects. Thus, the Audit Team can confirm the 8% IRR benchmark (after tax) is appropriate for the investment analysis of the proposed project.

The Audit Team has also checked that in the Feasibility Study Report (FSR) of the Project /9/, 8% of IRR (after tax) is also selected as the benchmark for the economic analysis. The FSR was approved by Inner Mongolia Development and Reform Commission, which implicates the benchmark of 8% (after tax), is considered appropriate by local governmental authorities. It may further be noted that design institutes, investors, government authorities, project owners, and consultants commonly apply this benchmark of 8% (after tax) for assessing the financial viability of wind power projects in China. This is also reflected in the financial analysis of other similar wind power projects in China registered as CDM project activities.

The Audit Team confirmed the benchmark of 8% project IRR (after tax) in the financial analysis is suitable to the project activity.

### **Assessment of IRR calculation**

The FSR was completed in February 2010 and approved by Inner Mongoliae Development and Reform Commission on 25 August 2010. The Audit Team has assessed the IRR calculation sheet /22/. The Audit Team compared the input value in the IRR calculation sheet and confirmed that all values for calculation of the IRR of the proposed project sourced from the Feasibility Study Report (FSR) /9/. As discussed above, the investment decision of the project was made on 08 March 2010 /24/ based on the FSR, project starting date is considered to be 20 April 2010, and hence to the Audit Team's opinion, the FSR is deemed to be the foundation of Project investment, and the period of time between the finalization of the FSR and the investment decision is sufficiently short and it is unlikely input values would have materially changed.

The computation method for Project IRR of the project activity was checked by the Audit Team. The Audit Team considered the method is compliance with that quoted in the "Interim Rules on Economic Assessment of Electrical Engineering Retrofit Projects" /57/, and Guidelines on the Assessment of Investment Analysis, Version 05 /15/. The Audit Team therefore confirms the consistency between the benchmark selected and project IRR calculation.

The Audit Team ensures that interest payable has been taken into account in the calculation of income tax in the IRR calculation /22/. The interest rate used in the investment analysis has been cross-checked by the Audit Team below, which is confirmed as prevailing commercial interest rates in China.

The input parameters used in the financial analysis were compared with the data reported for other similar wind farm CDM projects in Inner Mongolia, comparing the plant load factor the investment costs per MW, percentage of O&M costs relative to total investment costs as follow tables, which shows the investment costs and O&M costs are in a reasonable range.

Comparison criteria are as follows:



1. Same region, i.e. Inner Mongolia Autonomous Region;
2. Installed capacity: all;
3. Registered CDM hydropower projects due to the publicly available information;
4. Data source from CDM pipeline (update to 26 September 2011)

(<http://cdmpipeline.org/publications/CDMpipeline.xlsx>)

Project Name	Capacity (MW)	Total investment (Million RMB)	RMB/kW	RMB/kWh	Plant Load Factor	O&M/ Total investment	Other expense (Million RMB/yr)
Inner Mongolia Xisu Zhurihe Wind Farm Project	49.5	476.07	9,618	0.11	26.27%	2.57%	1.24
Keyouzhongqi Shenneng Hangali Wind Farm Project	50	502.8	10,056	0.10	26.47%	2.34%	0.93
Inner Mongolia Keyouqianqi Chaersen Wind Power Project	49.5	456.83	9,229	0.11	25.66%	2.64%	1.39
Baiyun Ebo Wind Farm Inner Mongolia Luneng Phase II	49.5	468.17	9,458	0.12	28.01%	3.10%	1.09
Inner Mongolia Jingneng Saihan Wind Farm Phase II Project	48	466.35	9,716	0.10	28.20%	2.53%	0.96
Inner Mongolia Jiulong wind Power Project	49.5	468.99	9,475	0.10	26.67%	2.42%	1.49
Inner Mongolia Guyang Huaishuo I Wind Farm Project	49.5	478.99	9,677	0.10	25.90%	2.36%	0.90
Inner Mongolia Urad Houqi Wuliji Wind Power Project	50	565.69	11,314	0.06	28.11%	1.33%	0.98
Huadian Kezuozhongqi Wind Power Phase I Project	49.5	553.28	11,177	0.10	29.81%	2.28%	1.98
Inner Mongolia Chifeng Yikesong Wind Power Project	49.3	464.35	9,419	0.11	26.22%	2.65%	0.99
Inner Mongolia Wulatezhongqi Chuanjing Phase V Wind Power Project	49.5	413.45	8,353	0.11	29.58%	3.43%	1.98
Inner Mongolia Tongliao Zhalute Qi Phase I North Wind Power Project	49.3	508.35	10,311	0.07	26.47%	1.57%	0.49
Inner Mongolia Chifeng Dayuying Wind Farm Project	49.5	468.46	9,464	0.15	26.03%	3.68%	3.47
Inner Mongolia Goldwind Damao Wind Farm Phase II Project	49.5	438.59	8,860	0.12	26.93%	3.17%	0.93
Inner Mongolia Zhengxiangbaiqi Zheligentu project I wind farm project	49.5	490.28	9,905	0.09	26.52%	2.02%	1.49
Kezuohou Banner Huadeng 49.5MW Wind	49.5	522.5518	10,557	0.11	24.79%	2.23%	0.99

Farm Project							
Guodian Wuchuan Xiwulanbulang Hongshan Wind Farm Phase I 49.5MW Wind Power Project	49.5	476.78	9,632	0.09	26.14%	2.10%	1.98
Inner Mongolia Chifeng Songshan Laoshuiquan Wind Power Project	49.5	476.92	9,635	0.10	28.57%	2.61%	0.99
Inner Mongolia Alashan Helanshan Yinxing Wind Farm Phase I Project	49.5	510.963	10,322	0.12	24.61%	2.58%	2.48
Inner Mongolia Wengniute Sunjiaying Shangchang Wind Power Project	48	461.74	9,620	0.10	28.55%	2.63%	0.96
Inner Mongolia Wulanchabu Hongji Wind Farm Project	296.5	3109.85	10,489	0.08	27.97%	1.90%	5.81
Inner Mongolia Wengniute Wudaogou Xigouli Wind Power Project	48	461.82	9,621	0.10	28.54%	2.63%	0.96
Inner Mongolia Bayannaer Chuanjingsumu Wind Power Project	49.3	404.17	8,198	0.11	27.58%	3.33%	1.97
Guohua Tongliao Kezuo Zhongqi Phase I 49.5 MW Wind Farm Project	49.5	445.37	8,997	0.11	25.10%	2.60%	1.98
Inner Mongolia Hulunbeier Yakeshi Xingan Wind Power Project	49.5	524.37	10,593	0.10	28.23%	2.27%	0.99
Inner Mongolia Wengniute Xiyangshugou Wind Power Project	48	462.41	9,634	0.10	28.59%	2.63%	0.96
Huaneng Tongliao Kezuozhongqi Dongbaiyin Wind Farm Project	49.5	474.25	9,581	0.10	25.99%	2.48%	0.74
Inner Mongolia Zhalute Arikunduleng Wind Farm Project	49.5	529.9206	10,705	0.11	27.78%	2.40%	1.49
Inner Mongolia Wuchuan Yihemei Wind Farm 49.5 MW Project	49.5	523.02	10,566	0.08	26.42%	1.73%	0.25
Datang Duolun Daxishan Farm II	30	292.941	9,765	0.06	26.62%	1.51%	0.30
Huaneng Tongliao Kezuozhongqi Xibaiyin Wind Farm Project	49.5	492.09	9,941	0.09	26.08%	2.15%	0.74
Datang Duolun Daxishan phase III Wind Farm project	49.5	510.51	10,313	0.07	26.96%	1.50%	0.50
Inner Mongolia Jingneng Zheligentu Wind Farm	49.5	474.02	9,576	0.08	23.52%	1.68%	1.02



Phase II Project							
Inner Mongolia Tongliao Zhalute Qi Beishala Wind Power Project	49.5	482.09	9,739	0.10	27.18%	2.43%	0.99
Inner Mongolia Kezuohouqi Baiyintala Wind Power Project	49.5	455.21	9,196	0.10	25.80%	2.48%	0.99
Inner Mongolia Kezuohouqi Xihailasitai Wind Power Project	49.5	452.77	9,147	0.10	25.67%	2.48%	0.99
Inner Mongolia Tongliao Naiman Banner Baxiantong Chagantala Wind Power Project	49.5	499.9	10,099	0.09	26.94%	2.18%	1.24
Inner Mongolia Zhalute Qi Wulijimuren Phase I Wind Farm Project	49.5	546.87	11,048	0.12	31.00%	2.89%	2.48
Huaneng Xinbaerhuzuo Qi Wind Farm Phase I Project	49.5	506.7	10,236	0.09	24.86%	1.87%	0.43
Guohua Wulate Zhongqi Chuanjing Phase II Wind Farm Project	49.5	510.9	10,321	0.07	29.88%	1.74%	1.49
Huaneng Keyouzhongqi Baiyinnula Wind Farm Project	49.5	487.96	9,858	0.10	26.54%	2.43%	0.74
Inner Mongolia Wudaogou III Wind Power Project	48	539.44	11,238	0.09	31.78%	2.15%	1.20
Huaneng Tongliao Kezuo Zhong Qi Nanhari Wind Farm Project	49.5	484.6073	9,790	0.10	25.09%	2.22%	0.99
CGN Inner Mongolia Zhurihe Phase I Wind Farm Project	49.5	494.11	9,982	0.08	27.89%	2.08%	0.99
Datang Chifeng Danianzi Wind Power Project	50	515.1	10,302	0.07	29.81%	1.87%	1.31
Daode 49.5MW Wind Power Project	49.5	499.51	10,091	0.11	25.11%	2.29%	1.24
Inner Mongolia Hailisu Phase I Wind Farm Project	49.5	489.1075	9,881	0.09	23.63%	1.89%	0.61
Huaneng Tongliao Zhurihe Phase II Wind Farm Project	49.5	491.9032	9,937	0.09	24.51%	1.87%	0.40
Huaneng Wuchuan Lihanliang Phase II Wind Farm Project	49.5	502.1326	10,144	0.09	26.64%	2.04%	0.99
Caishenliang 49.5MW Wind Power Generation Project in Inner Mongolia Autonomous Region	49.5	489.0954	9,881	0.10	26.17%	2.24%	0.74
Huaneng Tongliao Baolongshan Phase II Wind Farm Project	49.5	534.6	10,800	0.08	27.79%	1.81%	0.68
Inner Mongolia Tongliao Huolinhe Wind Power Project	50	459.41	9,188	0.09	26.96%	2.28%	1.50

Inner Mongolia Hangjin Yihewusu Wind Power Project	49.5	383.21	7,742	0.12	24.32%	3.27%	1.98
Tongliao Changxing Molimiao Wind Farm Changxing Wind Power Co., Ltd. 49.3MW Wind Power Generation Project	49.3	526.2753	10,675	0.05	25.16%	1.13%	0.25
Inner Mongolia Tongliao Zhalute Qi Dangxiaogou Wind Power Project	49.5	489.6904	9,893	0.10	27.49%	2.42%	1.00
Huaneng Wuchuan Lihanliang Phase I Wind Farm Project	49.5	527.5076	10,657	0.07	26.64%	1.47%	0.25
Inner Mongolia Chifeng Toudaogou Wind Power Project	50	503.1929	10,064	0.10	27.40%	2.50%	0.50
Inner Mongolia Huade 49.5MW Wind Farm Phase I Project	49.5	525.4653	10,615	0.11	29.20%	2.77%	1.98
Inner Mongolia Tongliao Baolongshan 49.5MW Wind Power Project	49.5	495.3364	10,007	0.08	27.33%	1.84%	0.68
Inner Mongolia Bayinxile Wind Power Project	49.5	514.0801	10,385	0.09	28.48%	2.21%	1.48
Inner Mongolia Shangdu Jiqingliang 49.5MW Wind Power Project	49.5	419.65	8,478	0.11	25.58%	2.88%	3.33
Inner Mongolia Saiwusu I Wind Power Project	49.5	425.43	8,595	0.10	28.42%	3.03%	1.98
Inner Mongolia Yihewusu Phase II 49.5 MW Wind Power Project	49.5	459.11	9,275	0.07	23.45%	1.66%	0.61
Chifeng Sunjiaying Wind Power Project	49.5	378.99	7,656	0.14	24.90%	4.12%	1.98
Inner Mongolia Jingneng Jixiang Huaya Wind Farm Phase II Project	49.5	522.33	10,552	0.10	26.82%	2.14%	0.99
Inner Mongolia Zhuozi II Wind Power Project	48	484.29	10,089	0.08	26.80%	1.91%	0.96
Inner Mongolia Jingneng Shangdu Jiqingliang Wind Farm Phase I Project	49.5	492.2001	9,943	0.10	28.92%	2.44%	1.49
Inner Mongolia Jingneng Chayouzhong Wind Farm Phase II Project	48.75	480.69	9,860	0.09	27.75%	2.19%	1.00
CGN Inner Mongolia Zhurihe Phase II Wind Farm Project	50	486.66	9,733	0.09	28.67%	2.39%	0.90
Huadian Kailu Yihetala Phase Two 49.5 MW Wind Farm Project in China	49.5	481.27	9,723	0.08	25.41%	1.83%	1.98
Inner Mongolia Chifeng Gaofeng Wind Power Project	50	469.31	9,386	0.12	30.07%	3.46%	2.00

Inner Mongolia Chifeng Daheishan Wind Power Project	49.3	459.8	9,327	0.13	28.83%	3.39%	1.00
Inner Mongolia Saiwusu II Wind Power Project	49.5	460.06	9,294	0.10	28.67%	2.59%	1.98
Inner Mongolia Bayannaoer Chuanjingsumu ( III ) Wind Power Project	49.5	390.5	7,889	0.13	26.93%	3.75%	2.23
Beijing Energy Huitengxile 49.5MW Wind Power Project	49.5	502.1	10,143	0.08	28.48%	2.08%	1.22
Chuanjing Wind Farm Inner Mongolia Luneng Phase II	49.5	515.19	10,408	0.10	25.92%	2.23%	0.90
Huadian Kulun 201MW Wind Farm Project	201	1786.61	8,889	0.10	28.20%	2.87%	7.45
North Longyuan Huitengliang Wind Power Project	300	2689.47	8,965	0.08	31.70%	2.51%	12.00
Inner Mongolia Zhuozi III Wind Power Project	48	555.83	11,580	0.05	29.97%	1.23%	0.61
Inner Mongolia Tongliao Wind Farm Project Phase III	49.5	502.89	10,159	0.08	26.22%	1.91%	0.25
Inner Mongolia Urad Middle Banner 45MW Wind-farm Project	45	461.94	10,265	0.07	22.76%	1.34%	0.54
Inner Mongolia Wengniute Banner Wudaogou Wind Power Project (II)	50	478.78	9,576	0.13	30.96%	3.60%	2.00
Inner Mongolia Wujier Phase I Wind Power Project	49.5	558.98	11,293	0.08	29.25%	1.82%	1.01
Inner Mongolia Siziwangqi Wulanhua Wind Farm Project	49.5	492.14	9,942	0.09	26.47%	2.09%	0.92
Inner Mongolia Bayanur Wuliji 49.5MW Wind Power Project	49.5	552.38	11,159	0.06	29.32%	1.48%	1.02
Tongliao Naiman Banner Baxiantong Haritang Wind Power Project	49.5	501.81	10,138	0.12	24.59%	2.48%	1.24
Beijing Energy Huolinhe B First Phase 49.5MW Wind Farm Project	49.5	470.53	9,506	0.11	25.01%	2.61%	3.22
CGN Inner Mongolia Huitengliang Phase I Wind Farm Project	50	531.33	10,627	0.09	28.98%	2.06%	1.02
Tongliao Kezuozhong Banner Dailiji Aorimu Wind Power Project	49.5	485.06	9,799	0.11	25.19%	2.47%	1.24
Huaneng Hailar Xiaoliang Phase I Wind Farm Project	49.5	565.2	11,418	0.09	28.42%	1.88%	0.49
Inner Mongolia Chayouhouqi Hongmu	48	504.85	10,518	0.08	27.95%	1.87%	0.94

48 MW Wind Power Project							
Baiyun'ebo 45MW Wind farm Project	45	482.31	10,718	0.09	24.87%	1.85%	0.59
Inner Mongolia Ximeng Zheligentu Wind Farm Phase I Project	48.75	439.18	9,009	0.10	23.29%	2.37%	1.00
Inner Mongolia Chifeng Saihanba Tashanzi Wind Power Project	49.5	458.57	9,264	0.11	27.99%	2.89%	1.21
Huaneng Tongliao Zhurihe Phase I Wind Farm Project	49.5	527.522	10,657	0.09	25.76%	2.00%	0.25
Inner Mongolia Taipusi Gongbaolage Wind Farm Project	49.5	409.33	8,269	0.10	22.94%	2.48%	3.98
Huaneng Tongliao Baolongshan Phase III Wind Farm Project	49.5	531.45	10,736	0.08	27.81%	1.86%	0.68
Huadian Kailu Yihetala Phase one 49.5 MW Wind Farm Project	49.5	477.22	9,641	0.10	25.51%	2.35%	1.11
Inner Mongolia Chifeng Daguangdingzishan Wind Power Project	49.3	496.15	10,064	0.13	29.52%	3.45%	1.02
Huaneng Inner Mongolia Keyouzhongqi Gaoliban Wind Farm Project	49.5	549.73	11,106	0.07	26.47%	1.51%	0.50
Datang Chifeng Bolike II Wind Power Project	50	508.24	10,165	0.08	28.56%	1.87%	0.87
Inner Mongolia Chifeng Yihegong Windfarm Project	49.5	483.23	9,762	0.09	25.75%	2.08%	1.67
Inner Mongolia Wuliji Wind Farm Project	50	540.48	10,810	0.07	26.86%	1.49%	0.94
Inner Mongolia Keyouqianqi Wind Farm Project	49.5	483.57	9,769	0.11	28.50%	2.79%	0.74
Inner Mongolia Chifeng Saihanba Qingmachang Wind Power Project	49.5	464.78	9,389	0.11	28.24%	2.89%	1.22
Inner Mongolia Jingneng Saihan Wind Farm Phase I Project	49.5	515.14	10,407	0.09	28.71%	2.08%	1.00
Inner Mongolia Xinghe Hangtian Wind Farm Project	49.5	447.8	9,046	0.10	25.67%	2.50%	1.19
Huaneng Damao Maoming Phase I Wind Farm Project	49.5	527.64	10,659	0.08	28.10%	1.85%	0.40
Huade Daditaihong 49.5MW Wind Power Project	49.5	470.42	9,503	0.08	25.17%	1.95%	1.24
IMAR Debaotu Wind Farm Phase I 49.5MW Project	49.5	534.76	10,803	0.08	28.77%	1.92%	0.75
Inner Mongolia Bayannaer	49.3	410.44	8,325	0.11	29.14%	3.29%	1.97

Chuanjingsumu (IV) Wind Power Project							
Xilinguole Huitengliang Wind Power Project Guotai Phase I	49.5	485.66	9,811	0.10	27.50%	2.55%	N/A
Inner Mongolia Huitengliang Phase II Wind Power Project	49.5	454.79	9,188	0.12	27.63%	3.23%	1.32
Guohua Chenbaerhu Qi Phase I 49.5MW Wind Farm Project	49.5	483.0626	9,759	0.07	23.90%	1.43%	0.50
Guohua Tongliao Kezuo Zhongqi Phase II 49.5 MW Wind Farm Project	49.5	489.3318	9,885	0.08	24.37%	1.79%	0.25
Inner Mongolia Erlianhaote Phase I Wind Farm Project	21	214.9553	10,236	0.10	26.31%	2.14%	0.53
CGN Inner Mongolia Duerbote Wind farm Project	49.5	498.14	10,063	0.09	26.32%	2.06%	0.91
Inner Mongolia Baotou Bayin Wind Power Project	201	1590.88	7,915	0.06	26.46%	1.84%	4.50
Inner-Mongolia Ximeng Abag 49.5MW Wind Power Project	49.5	584.43	11,807	0.10	27.17%	1.97%	0.91
Inner Mongolia Bayannaoer Chuanjingsumu 49.3MW Wind Power Project	49.3	486.86	9,875	0.09	26.11%	2.18%	1.97
Huade Changshun 49.5MW Wind Power Project	49.5	454.6705	9,185	0.09	25.80%	2.13%	1.03
CGN Inner Mongolia Huitengliang 300MW Wind Power Project	300	2910.83	9,703	0.08	30.81%	2.13%	12.00
Expansion Project of Huadian Inner Mongolia Huitengxile Wind Farm	21.25	178.66	8,408	0.07	31.32%	2.33%	0.85
Sinohydro Inner Mongolia Ximeng Honggeer Wind Power Project	49.5	459.79	9,289	0.10	30.43%	2.96%	2.48
Inner Mongolia Duolun Daxishan 30.6MW Wind Power Project	30.6	303.19	9,908	0.08	27.28%	2.03%	0.59
Inner Mongolia North Longyuan Huitengxile WindFarm Project	40.5	420	10,370	0.05	29.40%	1.19%	0.41
Guohua Inner Mongolia Huitengliang West Wind Farm Project	49.5	455.65	9,205	0.08	28.12%	2.08%	1.34
Inner Mongolia North Longyuan Huitengliang Windfarm Project	49.5	459.48	9,282	0.05	27.31%	1.41%	0.50
Goldwind Damao Wind Farm Project	49.5	416.61	8,416	0.08	27.71%	2.17%	0.63
Fuhui Inner Mongolia	49.5	406.07	8,203	0.09	26.70%	2.68%	0.65

Narenbaolige Wind Farm Project							
Fuhui Inner Mongolia Tugurige Wind Farm Project	49.5	387.22	7,823	0.09	27.53%	2.79%	0.65
Inner Mongolia North Longyuan Zhurihe WindFarm Project	49.5	453.57	9,163	0.05	27.06%	1.41%	0.50
Inner Mongolia Bayinhanggai 49.5MW Wind Farm Project	49.5	512.9	10,362	0.06	24.68%	1.34%	0.64
Inner Mongolia Chifeng Dongshan Phase II 50MW Wind Power Project	50	509.01	10,180	0.07	28.33%	1.59%	0.36
Inner Mongolia Chifeng Bolike 50MW Wind Power Project	50	518.62	10,372	0.07	28.05%	1.68%	0.54
Inner Mongolia Bayin'aobao 49.5MW Wind Farm Project (Phase I)	49.5	514.48	10,394	0.09	26.61%	2.00%	0.92
Inner Mongolia Wudaogou 50.25MW Wind Power Project	50.25	472.66	9,406	0.09	28.32%	2.39%	2.01
Inner Mongolia Dali Phase V 49.5MW Wind Power Project	49.5	580.1	11,719	0.12	25.42%	2.32%	0.45
Inner Mongolia Dali Phase IV 49.5MW Wind Power Project	49.5	546.95	11,049	0.18	28.46%	4.01%	0.45
Inner Mongolia Sunjiaying 50.25MW Wind Power Project	50.25	506.16	10,073	0.10	27.47%	2.36%	2.01
Inner Mongolia Zhuozi 40MW Wind Power Project	40	384.16	9,604	0.10	28.05%	2.55%	N/A
Guohua Inner Mongolia Huitengliang Wind Farm Project	48.75	502.1	10,299	0.08	28.92%	2.08%	1.34
Inner Mongolia Chifeng Saihanba West 30.6 MW Wind Farm Project	30.6	290.43	9,491	0.09	27.92%	2.27%	N/A
Inner Mongolia Huitengxile Jingneng 100MW Wind Power Project	100	780.94	7,809	0.08	29.60%	2.52%	N/A
Huadian Inner Mongolia Huitengxile 100.25MW Wind Farm Project	100.25	863.26	8,611	0.08	30.30%	2.34%	N/A
Inner Mongolia Huitengliang 49.5MW Wind Power Project	49.5	547.41	11,059	0.12	27.65%	2.66%	N/A
Inner Mongolia Chifeng Dongshan 49.3 MW Wind Power Project	49.3	514.95	10,445	0.07	28.39%	1.68%	0.54
<b>The proposed project</b>	<b>49.5</b>	<b>435.24</b>	<b>8,793</b>	<b>0.11</b>	<b>22.89%</b>	<b>2.60%</b>	<b>1.98</b>

The Audit Team also compared the input parameters with other 6 wind farms owned by the same project owner of China Water Group Huade Wind Power Co., Ltd., which have being applied to CDM registration.

Project Name	Capacity (MW)	Total static investment (Million RMB)	RMB/kW	RMB/kWh	Plant Load Factor	O&M/ Total investment	Other expense (Million RMB/yr)
Inner Mongolia China Water Group Huade Cheliwusu Wind Farm 49.5MW Project	49.5	416.38	8412	0.11	23.58%	2.66%	1.98
Inner Mongolia China Water Group Huade Erligetu Wind Farm 49.5MW Project	49.5	433.32	8754	0.11	24.02%	2.63%	1.98
Inner Mongolia China Water Group Huade Niujiatangzi Wind Farm 49.5MW Project	49.5	461.81	9330	0.12	23.82%	2.78%	1.98
Inner Mongolia China Water Group Huade Sitafangzi Wind Farm 49.5MW Project	49.5	413.85	8361	0.11	23.37%	2.67%	1.98
Inner Mongolia China Water Group Huade Heping Wind Farm 49.5MW Project	49.5	431.27	8712	0.11	22.98%	2.61%	1.98
Inner Mongolia China Water Group Huade Niujiacun Wind Farm 49.5MW Project	49.5	426.22	8611	0.11	23.33%	2.62%	1.98
<b>The proposed project</b>	49.5	435.24	8793	0.11	22.89%	2.60%	1.98

### ● Project Installation

The project installation capacity is 49MW. This is consistent with that indicated in the PDR and is confirmed by the Audit Team by reviewing the wind turbine generation units purchasing contract /34/ and reviewing the project's approval /9/.

### ● Electricity output

The expected annual electricity output is 99,404MWh and the load factor of the proposed project is 22.89 %, which are consistent with that in FSR.

In the FSR, the annual supplied electricity is estimated on the basis of real onsite wind measurements and 30 years regional wind statistics (1958-2009), which follows "Methodology of Wind Energy Resource Assessment for Wind Farm (GB/T 18710-2002)" /70/. The electricity generation was computed with software of WAsP introduced from Demark and then various energy loss factors have been considered to ensure the supplied electricity output accurate. Those factors include wake effect, generic air density adjustment, turbine availability,



rotor blades contamination, self power consumption & transmission line loss, controlling & turbulence influence, weather influence, generic power curve adjustment and blade direction adjustment. The Audit Team reviewed the “Compilation Method for Feasibility Study Report of Wind Power Projects” /71/ and confirmed that the selected energy loss factors used to calculate the electricity output is valid.

Moreover, the load factor has evidenced by a third party Inner Mongolia Power Exploration & Design Institute /9/ contracted by the project participants. As per the requirement of “Guidelines for the reporting and validation of plant load factors, annex11 EB48” /16/, the load factor of the project was defined correctly.

In addition, the comparison showed that the annual load factor (22.89%) of the proposed project is close to those values (22.76% to 31.78%) of the similar projects in the same region in Inner Mongolia.

Comparing with other 6 wind projects being applied to CDM registration owned by the project owner, the load factor is close to those values (22.98% to 24.02%) of other 6 wind projects.

The Audit Team’s opinion, the Expected Power output is reasonable.

- **Electricity Tariff**

The tariff of 0.51RMB/kWh (incl. VAT) in the PDD used for financial analysis of the proposed project is derived from the approved FSR /9/. By checking “Power Tariff Approval for the Wind Power Projects in Ulanqab City” /31/, the power tariff of the project is 0.51RMB/kWh (incl. VAT), which is consistent with that of FSR. By cross checking the notification issued by NDRC on 3 December 2007 (NDRC tariff [2007]No.3303) /59/ and on 23 July 2008 (NDRC tariff [2008]No.1876) /60/, which can be available at the starting date of project activity. The tariff of wind power in Ulanqab City 0.51 RMB/kWh (incl. VAT).

Benchmark electricity price for grid-connected wind power issued by NDRC on 01 August 2009 /58/, that tariff of wind power within Ulanqab City is regulated as 0.51 RMB/kWh (incl. VAT).

The Audit Team concluded that the tariff used in the PDD is reasonable and conservative.

- **Project Investment**

The project total static investment is 435,235,900 RMB. The value is consistent with that of the FSR /9/. Since the FSR would be evaluated by the local government regarding its credibility before getting approval, the Audit Team referred to the project’s approval /9/, issued by Inner Mongolia Development and Reform Committee, to check its consistency. The Audit Team is able to confirm the total static investment indicated in the project approval is the same to that in the FSR /9/.

The investment cost used in the financial analysis were compared with the data reported for other similar proposed CDM projects in the region, i.e. other wind power projects in Inner



Mongolia. The investment costs per kW and investment costs per annual kWh were found to be in the range of the other projects or more conservative. The range of investment costs kW was found to be 7,656 RMB/kW to 11,807 RMB/kW.

The Audit Team checked the exclusive contracts for the project /32//33//34//35//36//37//38//39/, the occurred dependent investment cost of the project reached 427,381,440 RMB, which accounts for 98.20% of the estimated total static investment in the FSR.

Due to the project being constructed with other two projects together (i.e. Heping Wind Power Farm Project and Liujiacun Wind Power Farm Project), some engineering would be shared with other two projects. The Audit Team also checked the shared contracts with other two projects (i.e. Heping Wind Power Farm Project and Liujiacun Wind Power Farm Project) /40//41//42//43//44//45//46//47//48//49//50/, the amount reached 41,192,380 RMB. Considering the project has same installed capacity with other projects, the project would be allocated one third of the cost, i.e. 13,730,793 RMB.

Therefore, the occurred investment cost of the project would be 441,112,233 RMB. Moreover, even if the allocated cost wouldn't be considered, the IRR of the project is 5.75%, which is still lower than the benchmark of 8%.

The Audit Team's opinion, the investment value applied in the PDD is reasonable and conservative.

#### ● Annual O&M Cost

The annual O&M cost used in the financial analysis were compared with the data reported for other similar proposed CDM projects in the region, i.e. other wind power projects in the Inner Mongolia.

The operation costs per annual kWh of the project is 0.11RMB/kWh, which is in the range of other similar proposed CDM projects in the region ( 0.05 RMB/kWh to 0.18 RMB/kWh) . Comparing with other 6 wind projects being applied to CDM registration owned by the project owner, the operation costs per annual kWh of the project is close to those values (0.11 RMB/kWh to 0.12 RMB/kWh) of other 6 wind projects.

The annual O&M cost accounts for 2.60% of the total investment, which is also in the range of other similar proposed CDM projects in the region ( 1.13% to 4.12%) . Comparing with other 6 wind projects being applied to CDM registration owned by the project owner, the percentage of O&M cost accounting for the total investment is close to those values (2.61% to 2.78%) of other 6 wind projects.

The Audit Team considered the O&M cost applied in the investment analysis is reasonable.

#### ● Other expense

The term "other expense" refers to additional production expenses, administrative expenses and operating expenses, maintenance, insurance, material, salary and welfare. This

definition was derived from the document “Economic Assessment Method and Parameters for Construction Projects” /52/ which was considered as the financing assessment basis and source for preparing the FSR. The Audit Team confirm the “other expense” identified in the FSR is appropriate and it is in line with the relevant regulation for designing PDR in China. Comparing the “other expense” of the proposed project with already registered projects of a similar scale in China. The Audit Team checked and found that the other expense per annual kWh of the project is 0.020RMB/kWh, which is in the range of other similar proposed CDM projects in the region ( 0.002 RMB/kWh to 0.04 RMB/kWh) . Comparing with other 6 wind projects being applied to CDM registration owned by the project owner, the other expense of the project is same as to those values of other 6 wind projects.

Furthermore, it should be noted that even if “other expense” were assumed to be zero, the project IRR without CER revenue would be 6.03%, which is still lower than the benchmark of 8%.

In the Audit Team opinion, the other cost applied in the investment analysis is reasonable.

- **Repair Cost**

The increase of the O&M costs would be caused by increased repair costs as the wind mills gets older. New wind mills do require less maintenance than older wind mills. Costs like salaries, insurance, material fee and other costs have been fixed in the investment analysis. Similarly, the tariff has been fixed. This is not in contradiction to fixed costs (i.e. not including inflation of the tariff and costs) in the Chinese investment analyses.

It was clearly stated in FSR that repair cost accounted for equipment expenditure will be 1.5%. This has been cross-checked from the technological literature “Wind Energy-the Facts” which is issued by European Wind Energy Association on 13 February 2009 /67/. The validation team considers the project O&M escalation rates reasonable and representative of the actual situation for similar wind turbines.

Furthermore, it should be noted that even if “repair cost” were assumed to be zero, the project IRR without CER revenue would be 7.23%, which is still lower than the benchmark of 8%.

In the Audit Team opinion, the repair cost applied in the investment analysis is reasonable.

- **Interest Rate**

The interest rate of 5.94% adopted by the PPD is consistent with the value of the FSR. These loan interest rates are crossed-checked against rates published by the People’s Bank of China /62/ by the Audit Team. The Audit Team can confirm that actual interest rates in November 2008 (which is the closest to the date of investment decision) are corresponding to synchronized interest rates published (for year 2008, i.e., 5.94%). Thus the interest rate used in the investment analysis can be confirmed reasonable.

79.6% of total investment comes from debt estimated in FSR. The Audit Team checked Loan Contract signed between three Gorge Financial Co., Ltd. and the project owner /51/. The actual loan is 280 million RMB. The actual loan ratio is 64.3%. Based on fixed interest rate and pay-back period, a deduction of project IRR was made that a lower proportion of debt will result in less interest payments, which consequently result in more profit and more tax payments. This again would lead to a lower project IRR. A higher debt ratio of 79.6% is therefore conservative. Therefore, a higher loan rate used in the investment analysis can be confirmed by the Audit Team more conservative.

The Audit Team confirmed the actual interest payable has been taken into account in the calculation of income tax in the IRR spreadsheet, which is in line with paragraph 11 of the Guidance on Assessment of Investment analysis version 05.

- **Residual Value**

Residual value = residual value rate  $\times$  fixed asset value = rate of residual value  $\times$  (static investment + interest during construction period)

As for the proposed project, the residual value rate is as 5% which is cited from PDR. According to the Notification on the execution method of adjustment of residual value rate of fixed asset for enterprises issued by State Administration of Taxation on 14 September 2005 /68/, the rate of residual value is fixed as 5%. Selection of 5% in FSR and PDD is in line with national regulation.

In the Audit Team opinion, it's reasonable to adopt 5% in PDD and FSR for the proposed project.

- **Depreciation**

The depreciation period of 15 year is derived from the FSR and thus the depreciation rate per year is 6.33%. According to the Implementation Rules of the Enterprise Income Tax Law /69/, the enterprise shall begin computing depreciation for a fixed asset in the month following the month in which the asset is into service, and shall cease computing depreciation for a fixed asset in the month following in which the asset's use is ceased. The minimum number of years for computing depreciation of fixed assets is 10 years for the manufacturing and business operations.

Therefore, the depreciation period of 15 years for the proposed project is in line with the Implementation Rules of the Enterprise Income Tax Law /69/.

- **Taxes**

The VAT rate for electricity is 17% /54/, VAT is to be repaid by 50% /72/, the equipment VAT is to be deducted from electricity sales /73/. The Audit Team confirms that they are consistent with relevant host country's regulations, which is valid at the time of the investment decision taken by the project owner.

### 3.5.3.3 Sensitivity Analysis

As per “Guidance on the assessment of Investment Analysis” /15/, a sensitivity analysis has been carried out for parameters contributing more than 20% to revenues or costs to check the robustness of the financial analysis. Reasonable variations of the static total investment, annual operational costs, electricity output, and on-grid tariff were checked by calculating the variation necessary to reach the benchmark and then discussing the likelihood for that to happen. None of the parameters in the sensitivity analysis are considered to have any significant positive correlation.

### **Total static investment**

When total static investment is decreased by 16.8%, the IRR can reach the benchmark. However, the actual investment reached 441,112,233 RMB as per contracts, which is higher than that in the FSR.

Therefore, total static investment being decreased by 16.8% is impossible.

### **Annual electricity output**

When the power generation of the project increases by 19.8% for the whole project life time, the IRR can reach the benchmark. But according to the FSR, the power generation of the proposed project is calculated based on the years wind assessment records and output of the turbines to be employed by the proposed project with scientific approach applied internationally. The power generation of the proposed project is a yearly average figure for the whole life time. Although the wind resource might be variable year by year, but the years average wind resource is not likely to be changed comparing wind historic resource. The anticipated power generation is also approved to by the local government and wind energy experts.

Therefore, the annual electricity output being increased by 19.8% in the whole lifetime is impossible.

### **Electricity tariff**

When the electricity tariff is increases by 19.8%, the IRR can reach the benchmark. In fact, the tariff has been regulated by government in China. The Audit Team verified “Benchmark electricity price for grid-connected wind power issued by NDRC on 01 August 2009” /58/, the region, where the project is located, implements the highest tariff in the whole country already.

Therefore, the tariff being increased by 19.8% is impossible.

### **Annual O&M cost**

When the annual O&M cost is decreased by 82.9%, the IRR can reach the benchmark. But with the increasing of repair cost, the annual O&M cost is be increased step by step.

Therefore, the annual O&M cost being decreased by 82.9% is impossible.

In conclusion, the investment analysis and sensitivity analysis have presented that the proposed project is unlikely to be the most financially attractive option. The financial calculations and assumptions have been assessed and considered appropriate and conservative. The project IRR with CER revenues was estimated to be above the benchmark.

### **3.5.4 Barrier analysis**

No other barrier analysis is applied in the PDD by the project proponent for this hydropower project.

### **3.5.5 Common practice analysis**

As required by 'Tool for the demonstration and assessment of additionality' /12/, a common practice is requested to be carried out as a credibility check to complete the investment analysis. The geographic scope of common practice made in the PDD is within Inner Mongolia, where the project is located. The geographic scope shall be in a comparable environment with respect to regulatory framework, investment climate, access to financing, etc.

According to article 1 of the 'Notice on Wind Power Construction and Management' /61/ issued by China NDRC, wind farm project development plan should be developed at provincial level based on its own wind resources and local social economical conditions, the Audit Team can confirm that Inner Mongolia can be regarded as the geographic scope with respect to regulatory framework. Electricity Tariff is also an important issue for development wind farm projects. The determined tariff shall be finally approved by the Chinese NDRC. By referring to the most latest approved electricity tariff set by the Chinese NDRC /58//59//60//61/, the electricity tariff could significantly different among provinces within China. Hence project financing incentives could be different to each other province. As discussed above, the Audit Team was able to confirm that the geographic scope for common practice analysis is appropriate.

The windfarm projects after 2002 were identified for common practice analysis since the plant-grid separation policy was implemented since 2002 /63/. The Audit Team considers that this was transparently substantiated for the project identification as this was one of the major milestones for the Chinese power industry, in which the power industry was reformed from national power companies to several independent power enterprises authorized by the State Council. The private investors were especially affected by this policy as some of the financial supports such as tariff privilege were no longer guaranteed by the government. Financial competitions were introduced in the open market among the independent power enterprises.

The Audit Team verified "Statistics of domestic wind farm installation capacity in 2007, 2008 and 2009" /74/ and confirmed that there are four wind power projects in Inner Mongolia, which are either registered or applying for CDM are not taken into consideration here. The non-CDM similar projects are listed as follows:

Name	Capacity (MW)	Operation Date	Note
Keshiketeng Qi Dali Phase III wind power project (Dali III)	31.2	2003.12 (10.2MW) 2004.4 (21MW)	/75/
Bailingmiao Phase I wind power project (Bailingmiao I)	50	2007.12 (35MW) 2008.2 (15MW)	/76/
Bailingmiao Phase II wind power project (Bailingmiao II)	50	2009	/77/
Honiton Xiwu Phase I wind farm project (Xiwu I)	50	2010	/78/

The Dali III project was funded by the National Debt Specific Fund to demonstrate the domestic manufacture of the wind turbines, which enjoys favorable treatments which is not available for the proposed Project. Thus it does not have the investment barriers as the project does. This differentiates in nature the Dali III project from the proposed Project activity as such support is no longer available.

The Bailingmiao I project, the Bailingmiao II project and the Xiwu I project are invested by the foreign investors therefore it was not eligible to be considered as CDM project under the Chinese DNA rules. However, these projects also have investment barrier. Therefore, they had to seek and obtain additional financial support from the carbon market by its registration of Voluntary Emission Reduction under Golden Standard Voluntary Carbon Standard, to overcome the investment barrier. This differentiates in nature these three projects from the proposed Project activity as there is no foreign investment for the Project.

In the Audit Team opinion, there are essential distinctions between the project activity and other similar wind power projects and the project activity is not common practice and is hence additional.

In summary, the assessment of the arguments presented above is deemed to sufficiently demonstrate that the project is not a likely baseline scenario, and that emission reductions resulting from the project are additional.

### 3.6 Monitoring

The project applies the approved baseline and monitoring methodology, ACM0002, Version 12.2.0. The application of the methodology has been justified in section 3.4.1 of this report. The data monitored and the monitoring interval and frequency is in compliance with the methodology. The monitoring method has been clearly described in section B.7.1 of the PDD and examined by the Audit Team to be appropriate. The project investor has issued the CDM Monitoring Manual and Training Plan /27/ for training the monitoring staff and implementing the monitoring procedure. In Audit Team's opinion, the project owner is capable of implementing the project monitoring job.



In Audit Team's opinion, the project owner is capable of implementing the project monitoring job.

### 3.6.1 Parameters determined ex-ante

The Audit Team has examined the following parameters that determined ex-ante by document review:

The baseline grid emission factor is determined ex-ante, based on IPCC default value, the most recent information available at the time of PDD submission for validation /18//19/, published by Chinese DNA /17/, and is calculated as a combined margin, consisting of the weighted average of the OM and BM emission coefficients; The data source are listed clearly in Annex 3 of the PDD, which is consistent with the methodology ACM0002, Version 12.2.0.

### 3.6.2 Parameters monitored ex-post

Based on the onsite inspection and the confirmation of management representative (i.e. Junsong GAO)/i/ during the onsite validation, the project is confirmed to share one gateway electric meter with other 7 wind farms owned by the same project owner of China Water Group Huade Wind Power Co., Ltd. as demonsted in the line diagram of PDD /1/, thus the parameters required to be monitored for the project would be,

- Electricity exported to the grid by the Phase j project (j=I, II, III, IV, V, VI, VII, VIII) part i (i=1, 2, 3, 4 for Phase I project, i=1, 2, 3 for the other 7 projects) in year y /  $ES_{j,i,export,y}$  ;
- Electricity imported from the grid to the Phase j project (j=I, II, III, IV, V, VI, VII, VIII) part i (i=1, 2, 3, 4 for Phase I project, i=1, 2, 3 for the other 7 projects) in year y /  $ES_{j,i,import,y}$  ;
- Total electricity exported to the grid by all the 8 projects (including the Project) in year y /  $ES_{total,export,y}$  ;
- Total electricity imported from the grid by all the 8 projects (including the Project) in year y /  $ES_{total,import,y}$  ;
- The amount of electricity exported to the grid from the wind farm connected to the transformore p (p=A, B, C, D, E) in year y /  $ES_{p,export,y}$  ;
- The amount of electricity imported from the grid to the wind farm connected to the transformore p (p=B, C, D, E; bi-directional) in year y /  $ES_{p,import,y}$  ;
- Quantity of net electricity generation supplied by the project to the grid in year y /  $EG_{facility,y}$  .

For the monitoring of the net electricity supplied by the project to the grid, 34 electric meters will be adopted in the project, detailed determination as following,



$$EG_{facility,y} = ES_{total,exp ort,y} \times \frac{\sum_{i=1}^3 ES_{II,i,exp ort,y}}{\sum_{i=1}^4 ES_{I,i,exp ort,y} + \sum_{j=II}^{VIII} \sum_{i=1}^3 ES_{j,i,exp ort,y}} - ES_{total,import,y} \times \frac{\sum_{i=1}^3 ES_{II,i,import,y}}{\sum_{i=1}^4 ES_{I,i,import,y} + \sum_{j=II}^{VIII} \sum_{i=1}^3 ES_{j,i,import,y}}$$

As selected in the technical agreement of main transformer involved in the project /82/, the transformer loss of 5 main transformers are all less than 0.5%. In addition, based on the expertise of the validation team, the line transmission loss can be ignored due to the equivalently short distance between each of 8 projects and the substation inspected during the on-site assessment, thus the above determining of weighting can be considered reasonable.

Further, according to the technical management rules on the electric metering equipments (DL/T448-2000) /66/, the accuracy of electric meter shall be applied the type I of metering equipment (i.e. 0.2s or 0.5s) for the installed capacity more than 200MW, and the type II of metering equipment (i.e. 0.5s or 0.5) for the installed capacity more than 100MW, and the type III of metering equipment (i.e. 1.0) for the installed capacity below 100MW, thus the validation team can consider that the accuracy of electric meters assumed can ensure the monitoring of electricity to the grid by the project.

As described in the monitoring plan of the PDD /1/, all parameters will be continuously measured by meters, the readings of the meters will be recorded monthly and the monitoring meters will be calibrated on the yearly basis in accordance with national relevant regulations /66/. Therefore, the validation team concluded that the monitoring plan in the PDD contained all necessary parameters and their monitoring methods are in compliance with the requirements in the applied methodology /5/

In the Audit Team's opinion, the monitored data are complete and are in line with the applied methodologies.

### 3.6.3 Management system and quality assurance

A CDM team will be set up by the project owner to carry out the monitoring implementation. As discussed above, all the monitoring staff will be trained against with the CDM Monitoring Manual and training plan /27/. The data collection follow has been clearly described in the PDD. The monitoring position and parameters are also indicated in the PDD. The meters accuracy level, monitoring frequency and monitoring erroneous handling procedures are discussed in the PDD. The metering equipment will be calibrated according to national standard. The accuracy level of the metering equipment will be 0.2s. All important indicators for controlling and reporting of project performance are incorporated in the monitoring plan.

In the Audit Team's opinion, the project participants are able to implement the monitoring plan.

### 3.7 Sustainable Development

The DNA from the host country NDRC has issued the Letter of Approval /2/, which has been assessed by the Audit Team to be valid, and confirmed the Project will assist China in achieving sustainable development.

By document reviewing of the FSR /9/ of project, the Project will bring positive effects to the local people such as providing clean energy and increasing permanent job opportunity during operation and temporary job opportunities during construction phase. The Project can also stimulate the local economy conditions because the construction materials are purchased locally and mitigate poverty.

### 3.8 Environmental Impacts

The EIA /10/ has been finalized by Ulanqab City Environment Protection Research Institute on 26 March 2010 and approved by Inner Mongolia Autonomous Region Environment Protection Bureau on 09 July 2010. The environment impacts have been described in Section D.1 of the PDD. According to the EIA, no significant environmental impacts are expected. During on site interview with Mr. He Chengbing /IV/, the director from Environment Protection Bureau of Huade County, that no complaints are received for the construction of the Project. The EIA has been performed in accordance with all relevant local regulations.

In the Audit Team's opinion, the environmental impact assessment has been carried out correctly in accordance with procedures as required by China.

### 3.9 Local Stakeholder Consultation

The local stakeholder survey was carried out on 15 March 2010 /25/. Project proponents introduced to the Audit Team that at start of the stakeholder interview, the local stakeholders were informed by means of published notices /26/. Totally 35 questionnaires were distributed. The survey results and statistics analysis are presented in section E.2 of the PDD. The survey demonstrates that the local community are supportive to the project. The implementation of the project could benefit the local in aspects of ecological environment protection and job opportunities.

In the Audit Team's opinion, the process for the survey is adequate and credible for local stakeholder consultation.

### 3.10 Comments by Parties, Stakeholders and NGOs

The PDD of Inner Mongolia China Water Group Huade Sandaogou Wind Farm 49.5MW Project was made publicly available on UNFCCC website (<http://cdm.unfccc.int/Projects/Validation/DB/QGRD4L7ZZUR99MGSNX8XUHUQBW2EIS/view.html>) and Parties, stakeholders and NGOs were through the CDM website invited to provide comments during a 30 days period from 14 June to 13 July 2011.

A comment was received and is given (in unedited form) in the below text box.

**Comment by:**

☐ Accredited NGO      ☐ Party      ☒ Stakeholder

**Provided on:** 14 June 2011**Subject:** None

**Comment:** It is evident from the PDD that the values are consistent and it is definitely forged and cooked up values to show a non CDM project as a CDM project. What is this? DoE to check the Detailed Project Report and Feasibility Report which is submitted to the other agencies and Banks by Project owner and ensure that the values match with the DPR/FR submitted to DoE also. After careful study of PDD it is found that DPR/FR is in different versions made and submitted with different purposes to different agencies which is totally unacceptable, illegal and unethical. PP/Consultant may show some undertaking letter from bank manager to DoE stating that both DPR's are same. These kinds of letters should not be accepted and entertained by DoE. While collecting the DPR/FR from banks and other agencies, all DPR/FR pages should be counter signed by Banks and other agencies so that the real DPR/FR given to other parties by the PP/Consultant is same as the one submitted to DOE. In this particular project there is clear cut evidence that DPR/FR values are changed/fabricated mischievously and intentionally. This must be probed fully. DOE must take a written undertaking from the PP/Consultant about the list of parties to whom this DPR/FR is submitted and for what purposes. Then DOE should cross check with all the parties and confirm that the same DPR/FR is submitted to all the parties correctly without any changes. DOE must not accept any reports and undertakings from PP/Consultant. DOE must make independent evaluation and use totally different parties without informing the PP or Consultant to cross check the facts. DOE to write to the party who prepared the DPR/FR which is submitted to the banks and other agencies and the same is verified against the one submitted to the DOE by PP/Consultant. This project is a fabricated and fake CDM project and must be rejected by the DOE right away. DOE should not support this kind of projects otherwise CDM EB should suspend this DOE for at least one year.

According to articles 40-42 of VVM (Version 01.2), the Audit Team has taken into account the comments received and details of actions taken to take due account of the comment asfollowing:

1. Document review: During the on-site assessment, the Audit Team has received the original FSR of the proposed project and found that the original FSR of project was completed in February 2010 by Inner Mongolia Power Exploration & Design Institute. The project was approved by Inner Mongolia Autonomous Region Development & Reform Commission on 25 August 2010.

2. On-site interview: During the on-site assessment, the Audit Team has interviewed Mr. Xing Aibing /III/ (the officer from Development and Reform Bureau of Huade County) and Mr. He Chengbing /IV/ (the officer from Development and Reform Bureau of Huade County) that whether the FSR of the project provided to Inner Mongolia Autonomous Region Development & Reform Commission for approval and the FSR provided to the Audit Team for validation is consistent. Mr. Xing Aibing /III/ and Mr. He Chengbing /IV/ confirmed that both the FSR of the

project are totally same (including all input values of the FSR). Meanwhile, the Audit Team interviewed with Mr. Ruan Yizhou /V/ (the officer from Three Gorges Finance Co., Ltd.) by phone, and also confirmed that the FSR, who received for loan, is same as that submitted by the project owner to the Audit Team.

Therefore, according to VVM (Version 01.2), the Audit Team confirmed that:

- there is no evidence to indicate that the FSR provided by PP for validation and for approval have been any changed;
- Moreover, the Audit Team requested for further clarification from the entity providing the comment as per the requirements of paragraph 42, VVM by email on 04 August 2011 /79/. No response has been received by now. The Audit Team also noticed that the same comments for other proposed CDM projects are also submitted by Zhong Zhouli in the same period of time when Zhong Zhouli raised comments for this project. Therefore, the Audit Team has reason to believe that the comments submitted by Zhong Zhouli are not for this project particularly.
- According to articles 40-42 of VVM (Version 01.2), the Audit Team has taken into account the comment received and details of actions taken to take due account of the comment, and confirmed that the comment raised by Zhong Zhou Li is not relevant with the proposed project and the FSR is real, acceptable and legal.

## **Appendix A**

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### **CDM VALIDATION PROTOCOL**

Inner Mongolia China Water Group Huade Sandaogou Wind Farm 49.5MW Project

in

**Inner Mongolia Autonomous Region, China**

**REPORT No. 01 997 9105064983**

**Table 1: Validation requirements**

(based on § 37 of the CDM Modalities and Procedures and on CDM Validation and Verification Manual.)

Checklist question	Ref.	MoV <sup>1</sup>	Findings, comments, references, data sources	Draft conclusion	Final conclusion
<b>1. Approval</b>					
1.1 Have Letters of Approval have been provided from all involved Parties?	/1/ /2/ /3/	DR I	The letters of approval from the DNA of China and UK is to be provided.	<del>GAR-1</del>	OK
1.2 Are all Parties, who issued the LoA, Parties to the Kyoto Protocol <u>and</u> is this stated in the LoA?	/1/ /2/ /3/	DR I	China ratified the Kyoto Protocol on 30th Aug., 2002.  UK, the Annex I party ratified the Kyoto Protocol on 31 May 2002.  The letters of approval from the DNA of China and UK is to be provided.	<del>GAR-1</del>	OK
1.3 Is every LoA from the Parties involved issued by an organisation listed as Designated National Authority (DNA) on the UNFCCC web site?	/1/ /2/ /3/	DR I	Ditto	<del>GAR-1</del>	OK
1.4 Is the participation in the CDM project activity voluntary <u>and</u> is this stated in all LoAs?	/1/ /2/ /3/	DR I	Ditto	<del>GAR-1</del>	OK

<sup>1</sup> MoV = Means of Verification, DR = Document Review, I = Interview, www = internet search.

1.5	Is the LoA unconditional with respect to 1.2 to 1.4?	/1/ /2/ /3/	DR I	Ditto	CAR-1	OK
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?	/1/ /2/ /3/	DR I	The MoC of the project is to be provided.	CAR-2	OK
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/ /2/ /3/	DR I	Ditto	CAR-1	OK
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/	DR I	As per the FSR, Approval and Loan contract, the Audit Team did not reveal any public funding from an Annex I Party involved in the project or any information that indicates that the project can be seen as a diversion of official development assistance (ODA) funding towards China.		OK
<b>2. Participation (VVM E.2)</b>						
2.1	Are the Parties and project participants (PP) listed in the section A.3 of the PDD correctly <u>and</u> is this information consistent with the contact details provided in Annex 1 of the PDD?	/1/ /2/	DR I	Yes. The Parties and project participants are correctly listed in section A.3 of the PDD, and this information is consistent with the contact details provided in Annex 1 of the PDD.		OK



2.2	Has every Party involved approved the participation of each corresponding PP, either by means of a LoA or by a separate written document?	/1/ /2/	DR I	See 1.1	CAR-1	OK
<b>3. Project Design Document (VVM E.3)</b>						
3.1	Is the PDD presented for validation based on the latest template available at the UNFCCC website?	/1/ /7/	DR	Yes. The Project Design Document Form (CDM PDD) – Version 03 has been used by the PPs.		OK.
3.2	Has the PDD been established in accordance with the CDM requirements for completing PDDs issued by the CDM EB?	/1/ /8/	DR	Yes. The PDD has been established as per “Guidelines for completing the project design document (CDM-PDD) and the proposed new baseline and monitoring methodologies (CDM-NM) version 07”.		OK
<b>4. Project Description (VVM E.4)</b>						
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/ /8/ /9/	DR I	Yes. The project employs 33 sets of 1,500 kW wind turbines and 99,404MWh electricity will be supplied to the grid per year.		OK

4.2 In the case of greenfield project activity, is the project design described sufficiently by means of specifications, drawings and manuals?	/1/ /9/ /10/	DR I	<p>According to FSR and EIA, the objective of the proposed project activity will be to generate electricity by utilizing wind resources, which can decrease the GHGs emission and at the same time alleviate the environment pollution caused by the combustion of the fossil fuels, and increase the proportion of the renewable energy sources for generation and improve the energy structure of the North China Power Grid.</p> <p>In section B.3 of PDD, Sources and gases in the project boundary have been described sufficiently drawings and list.</p>		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?	/1/ /9/	DR I	<p>Yes.</p> <p>The technologies of equipment and facility have been used in practice in China. For the project activity, according to local wind resource, some type equipments had been compared and analyzed sufficiently during FSR period by professional institution. It is the better result of operating 33 sets of 1,500 kW wind turbines will be installed and expected to supply 99,263 MWh to the grid per year.</p>		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?	/1/ /9/	DR I	Not applicable.		OK
<b>5. Baseline and Monitoring methodology</b>					

<b>5.1 General requirements</b>					
5.1.1 Is the methodology used in the project activity approved by the CDM EB <u>and</u> is the selected version still valid?	/1/ /5/	DR	Yes		OK
<b>5.2 Applicability of the selected methodology</b>					
5.2.1 Does the project activity qualify under the criteria for small-scale CDM project activities set out in § 6 (c) of decision 17/CP.7 and Annex II of the Modalities and Procedures for the CDM?	/1/ /5/ /9/	DR	No. According to the FSR and the findings of the on-site validation, the total installed capacity of 49.5MW has been presented clearly. So, the project activity is not qualified under the criteria for small-scale CDM project activities.		OK
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?	/1/ /5/ /9/	DR	Ditto.		OK
5.2.2 Are all applicability conditions of the selected baseline and monitoring methodology and all tools involved satisfied by the project activity?	/1/ /5/ /9/	DR I	Yes. The project is a greenfield wind resource for grid-connected electricity generation.		OK
5.2.3 Is the selection of the applied baseline and monitoring methodology justified?	/1/ /5/ /9/	DR	Yes. This methodology approved consolidated baseline and monitoring methodology ACM0002, Version 12.2.0 is applicable for a greenfield project using renewable resource for grid-connected electricity generation.		OK

5.2.4 Is the selected methodology correctly quoted in all related documents?	/1/ /5/ /9/ /11/ /12/	DR	Yes. This methodology of ACM0002, Version 12.2.0 also refers to the latest approved versions of the following tools: • Tool to calculate the emission factor for an electricity system; • Tool for the demonstration and assessment of additionality.		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?	/1/ /5/ /9/	DR	Yes. According to the selected methodology, all assumptions and data used by the project participants are clearly listed in the PDD. 1) Baseline emission is main emission source. 2) There are no emissions from the project which is a renewable energy project. 3) No leakage has to be considered for the proposed project activity. The related document (include methodology, FSR, Power year book and Energy year book) to be submitted for registration. The data have been properly referenced in PDD. Relevant national and/or sectoral policies and circumstances have been considered by PP in PDD.		OK
<b>5.3 Project boundary</b>					

5.3.1 Does the PDD correctly describe the project boundary?	/1/ /5/ /9/	DR	Yes. According to FSR and the pre-permit by grid company, the proposed project will be connected to NCPG. So, the spatial extent of the project boundary includes the project site and all power plants connected to NCPG. NCPG is an electricity system which is defined by the spatial extent of the power plants that can be dispatched without significant transmission constraints. The clear description has been in PDD.		OK
5.3.2 Does the PDD correctly indicate and describe the emission sources and sinks of GHG gases that are included in the project boundary?	/1/ /5/ /9/	DR I	Yes. The PDD correctly indicate and describe the emission sources.		OK
5.3.3 In cases where the methodology allows project participants to choose whether a source or gas is to be included in the project boundary, is the choice explained and justified by PPs?	/1/ /5/ /9/	DR	Yes. As per the approved baseline methodology ACM0002, Version 12.2.0, only CO2 is included in the project boundary.		OK
<b>5.4 Baseline identification</b>					

5.4.1 Has the procedure contained in the selected methodology to identify the most reasonable baseline scenario been applied correctly and documented in the PDD?	/1/ /5/ /9/	DR I	Yes. According to the description in the approved baseline methodology ACM0002, Version 12.2.0, if the project activity is the installation of a new renewable power plant, the baseline scenario is the following: 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".		OK
5.4.1.1 Is the identified baseline scenario plausible?	/1/ /5/ /9/	DR I	Ditto.		OK

5.4.1.2 Are all assumptions stated in a transparent and conservative manner?	/1/ /5/ /9/	DR I	<p>Yes.</p> <p>According to China Electric Power Yearbook, The NCPG is dominated by coal-fired power plants. It is deemed likely that coal-fired power plants will continue to dominate the power sector due to the local availability of low-cost coal. It is expected that renewable capacity additions will not have significant effects on the mix of the NCPG during the first crediting period. The Validation Team has verified the documents and confirmed the baseline scenario of the project has been demonstrated to be that an equivalent amount of electricity would, in the absence of the project activity, have been generated by the operation of grid-connected thermal power plants and by the addition of new generation sources. Emission sources and gases related to the baseline scenario, project scenario and leakage included in project boundary comply with the methodology applied. Section B.3 of PDD includes a diagram (Figure B.1) has indicated clearly.</p>		OK
5.4.2 Does the selected methodology require the use of tools <u>and</u> does PDD reflects that correctly?	/1/ /5/ /9/ /11/ /12/	DR I	<p>Yes</p> <p>Tool for the demonstration and assessment of additionality and Tool to calculate the emission factor for an electricity system have been applied and reflected correctly in PDD.</p>		OK



5.4.2.1 Were all the tools applied correctly?	/1/ /5/ /9/ /11/ /12/	DR I	Ditto		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/ /5/ /9/	DR I	Yes. According to the description in the approved baseline methodology ACM0002, Version 12.2.0, if the project activity is the installation of a new renewable power plant, the baseline scenario is the following: 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”.		OK
5.4.3.1 Has the choice of the baseline scenario been done using conservative assumptions?	/1/ /5/ /9/	DR I	Ditto		OK
5.4.4 Is the identified baseline scenario reasonable according to the assumptions, calculations and rationales used in the PDD and other reference sources?	/1/ /5/ /9/	DR I	Ditto		OK

5.4.5 Does the PDD describe how the national and sectoral policies relevant to the baseline scenario have been identified and considered in the PDD?	/1/ /5/ /9/	DR I	Ditto		OK
5.4.6 Does the PDD provide a verifiable description of the identified baseline scenario, including a description of the technology that would be employed and/or the activities that would take place in the absence of the project activity?	/1/ /5/ /9/	DR I	Ditto		OK
<b>5.5 Algorithm and/or formulae used to determine emission reductions</b>					

<p>5.5.1 Are all calculations applied and documented according to the selected methodology and in a complete and transparent manner?</p>	<p>/1/ /5/ /9/</p>	<p>DR I</p>	<p>Yes. According to selected methodology, all calculations are applied and documented as below process: - Following the methodology, the baseline emissions (BE<sub>y</sub>) are the CO<sub>2</sub> emissions from electricity generation in fossil fuel fired power plants that are displaced due to the project activity. - The emission reduction ER<sub>y</sub> by the project activity during the crediting period is the difference between baseline emissions (BE<sub>y</sub>), project emissions (PE<sub>y</sub>) and emissions due to leakage (Ly), as follows: 1) Baseline emissions: baseline emissions (BE<sub>y</sub> in tCO<sub>2</sub>) are the product of the baseline emissions factor (EF<sub>y</sub> in tCO<sub>2</sub>/MWh) times the electricity supplied by the project activity to the grid (EG<sub>y</sub> in MWh).: BE<sub>y</sub> = EG<sub>y</sub> * EF<sub>y</sub> 2) Project emissions: there are no emissions from the project which is a renewable energy project. 3) Leakage: no leakage has to be considered for the proposed project activity. 4) Emission reduction: ER<sub>y</sub>= BE<sub>y</sub>- PE<sub>y</sub>- Ly= BE<sub>y</sub>= EG<sub>y</sub> *EF<sub>y</sub>. - The emissions are calculated from the net electricity delivered to the grid by the project activity (EG<sub>y</sub>) and the combined margin emissions factor (EF<sub>y</sub>) as described in the "Tool to calculate the emission factor for an electricity system".</p>		<p>OK</p>
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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/ /5/ /9/ /11/	DR I	Yes. As per "Tool to calculate the emission factor for an electricity system", the combined margin (CM) emissions factor has been chosen and calculated correctly.		OK
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/ /11/	DR I	China Electric Power Yearbook 2010 was published in December 2010 and China Energy Statistical Yearbook 2010 was published in January 2011, which are both available at the time of validation. Please Clarify why the latest data source wasn't used for calculation.	GL-4	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/ /5/ /9/ /11/	DR I	The net electricity supplied by the project to the grid shall be monitored on implementation.  The estimate of the net electricity supplied to the grid is 99,404 MWh/y, which is consistent with the FSR approved by the local government. So, the estimate is reasonable.		OK
5.5.5 Have the major risks and uncertainties, which can influence the emission reduction estimates, been identified and addressed in the PDD?	/1/ /9/	DR I	There is no significant risk identified to the baseline as per the selected methodology ACM0002, Version 12.2.0.		OK
<b>5.6 Leakage</b>					
5.6.1 Has the leakage been identified and calculated according to the approved methodology?	/1/ /5/	DR	As per ACM0002, Version 12.2.0, no leakages need to be considered.		OK

5.6.2 Have the leakage been addressed in complete, conservative and substantiated manner?	/1/ /5/	DR	Ditto		OK
5.6.3 Are uncertainties in the leakage emission estimates properly addressed?	/1/ /5/	DR	Ditto		OK
<b>6. Methodology-related issues for afforestation or reforestation CDM project activities</b>					
Add specific A/R requirements – if applicable!	/1/	DR	Not applicable for this CDM project activity		OK
<b>7. Additionality</b>					
<b>7.1 Prior consideration of the CDM (VVM E.6.III.a)</b>					
7.1.1 Is there documented evidence provided by the project participants on how and when the decision to proceed with the project activity was taken?	/1/ /9/ /24/	DR I	Yes. The project owner decided to proceed with the project activity through application CDM financing at the Board meeting on 08 March 2010. The Board Minutes of Investment Decision about application CDM Financing has been provided by the project owner.		OK
7.1.2 Is the starting date of the project activity, reported in the PDD, in accordance with the “Glossary of CDM terms” <u>and</u> CDM VVM (§97)?	/1/ /9/ /32/ /33/ /34/ /35/ /36/ /37/ /38/ /39/	DR I	According to the equipment purchase, construction and installation contracts, the Validation Team identified that the starting date of the project is 20 April 2010. The starting date of the project in section B.5 of the PDD shall be corrected.	<del>CAR-3</del>	OK

7.1.3 Is the date stated in the provided evidence consistent with other available evidence (e.g. dates of construction, purchase orders for equipment)?	/1/ /9/ /32/ /33/ /34/ /35/ /36/ /37/ /38/ /39/	DR I	Ditto.		OK
7.1.4 If the project was not published and the starting date is on or after 2 <sup>nd</sup> August 2008, was it possible to receive from UNFCCC secretariat and/or DNA a written confirmation that PPs previously informed the above entities on commencement of the project activity and of their intention to seek CDM status?	/1/ /9/ /28/ /29/	DR I	Yes. The PP informed NDRC and EB about the prior consideration of CDM for the project on 30 September 2010 and 12 October 2010, respectively.		OK
7.1.5 For the project activities with a starting date before 2 <sup>nd</sup> August 2008 and before the actual publication, was there enough evidence presented to prove that PPs were previously aware of CDM?	/1/ /9/ /32/ /33/ /34/ /35/ /36/ /37/ /38/ /39/	DR I	N/A		OK

7.1.6 For the project activities with a starting date before 2 <sup>nd</sup> August 2008 and before the actual publication, was there enough evidence presented to prove that CDM benefits have been a decisive factor in the decision to proceed with the project activity?	/1/ /9/ /32/ /33/ /34/ /35/ /36/ /37/ /38/ /39/	DR I	N/A		OK
7.1.7 Does the individual or body that took the decision to proceed with the project activity have/had the authority to do so?	/1/ /9/ /24/	DR I	See 7.1.1		OK
7.1.8 For the project activities with a starting date before 2 <sup>nd</sup> August 2008 and before the actual publication, was there enough evidence presented to prove that PPs were taking continuing and real actions to secure CDM status for the project in parallel with its implementation?	/1/ /9/ /32/ /33/ /34/ /35/ /36/ /37/ /38/ /39/	DR I	N/A		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/ /9/ /24/	DR I	Ditto.		OK
<b>7.2 Identification of alternatives</b>					
7.2.1 Does the PDD identify and list credible alternatives to the CDM project activity in order to determine the most realistic baseline scenario, unless selected approved methodology prescribes/identifies the baseline scenario and no further analysis is required?	/1/ /5/ /9/	DR I	Yes. The project activity is based on the methodology <i>ACM0002, Version 12.2.0</i> , in which the baseline scenario has been prescribed for Greenfield projects. As per article 105 VVM, no further alternative analysis is required.		OK
7.2.2 Does the list of alternatives include as one of the options that the project activity is undertaken without being registered as a CDM project activity?	/1/ /5/ /9/	DR I	Ditto.		OK
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?	/1/ /5/ /9/	DR I	Ditto.		OK

7.2.4 Is the exclusion of the alternatives for legal reasons justified?	/1/ /5/ /9/	DR I	Ditto.		OK
<b>7.3 Investment Analysis</b>					
7.3.1 Are all sources of revenues (including savings) have been considered in the PDD and all calculations?	/1/ /5/ /9/ /15/ /22/	DR I	Yes. All sources of revenues have been considered in the PDD and all calculations, which are all from PDD approved by the local government. During validation period, the tax used in IRR calculation had been cross-checked according to related regulation and considered reasonable by the Validation Team.		OK
7.3.2 Is the type of investment analysis selected correctly in the PDD?	/1/ /5/ /9/ /15/ /22/	DR I	Yes. The proposed project generates financial and economic benefits through the sales of electricity other than CDM related income. A benchmark analysis is thus selected for conducting the investment analysis. This type of investment analysis selected is in line with Chinese practice and followed in the FSR. It is available and correct that benchmark analysis is used for the project activity.		OK
7.3.3 Is the selected financial indicator chosen and applied correctly?	/1/ /5/ /9/ /15/ /22/	DR I	Yes. Based on Chinese regulation, An IRR of 8% for the total investment of a project is regarded as a benchmark for investments in new wind power plants, fossil fuel fired plants and wind farm projects.		OK.

7.3.4 Is the guidance on IRR calculation and assessment correctly applied?	/1/ /5/ /9/ /15/ /22/	DR I	The result of IRR in the PDD is inconsistent with that in FSR and IRR spreadsheet. PDD is to be corrected.	CAR-4	OK
7.3.5 In case project participants use values from Feasibility Study Reports (FSR) is it possible to verify that the period between the FSR date and investment decision was reasonably short and FSR values did not change materially?	/1/ /5/ /9/	DR I	For the project, the FSR was made in February 2010 and the investment decision was made on 08 March 2010. Hence the FSR values for project are not materially changed.  The result of IRR in the PDD is inconsistent with that in FSR and IRR spreadsheet. PDD is to be corrected.	CAR-4	OK
7.3.6 Are all the values consistent between FSR and PDD <u>and</u> are inconsistencies properly justified?	/1/ /5/ /9/	DR I	The Validation Team compared the input parameters for the financial analysis included in the PDD with the parameters stated in the FSR and was able to confirm that the values applied are consistent with the value stated in FSR.		OK
7.3.7 Were all the values from FSR applicable and valid at the time of the investment decision?	/1/ /5/ /9/	DR I	Please clarify further the applicability and the validity of the values from FSR, i.e. the supplied electricity, total investment, power tariff, each breakdown of O&M cost.	GL-2	OK

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/ /5/ /9/	DR I	Yes.		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/ /5/ /9/	DR I	<p>The IRR calculation meets the requirements of "Guidelines on the Assessment of Investment Analysis (version 3), Annex 58, EB 51".</p> <p>The result of IRR in the PDD is inconsistent with that in FSR and IRR spreadsheet. PDD is to be corrected.</p>	CAR-4	OK
<b>7.4 Barrier analysis</b>					
7.4.1 Are there any issues addressed in the barrier analysis that have a clear impact on the financial viability of the project activity and that shall be assessed by an investment analysis?	/1/	DR	The project did not use the step		OK
7.4.2 Do the listed barriers exist <u>and</u> is their existence substantiated?	/1/	DR	Ditto.		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/	DR	Ditto.		OK
<b>7.5 Common practice analysis</b>					

7.5.1 If the PPs claim in the PDD that CDM project activity is the “first of its kind”, is it justified?	/1/ /5/ /9/	DR I	The project activity is not the “first of its kind”.		OK
7.5.2 Are the geographical boundaries of the project activity identified correctly?	/1/ /5/ /9/	DR I	Yes. The Validation Team has checked the reference and confirmed the different investment environment for each province, the different electricity tariff for different province, and the difference of wind resources in China. Hence, It is the correctly that Inner Mongolia Autonomous Region selected as geographical area for the project common practice analysis.		OK
7.5.3 Does the PDD provide an explanation why this region was selected and deemed more appropriate <u>and</u> is this explanation traceable and reliable?	/1/ /5/ /9/	DR I	Ditto		OK
7.5.4 Are there similar operational project activities, other than CDM activities, “widely observed and commonly carried out” in the defined region?	/1/ /5/ /9/	DR I	The completeness of the data source in the common practice analysis and the essential distinctions between the CDM project activity and the other similar activities should be clarified further.	GL-3	OK
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/ /5/ /9/	DR I	Ditto.	GL-3	OK
<b>8. Monitoring plan</b>					

8.1 Are all parameters required by the selected approved methodology or tool identified <u>and</u> listed in the PDD?	/1/ /5/ /9/	DR	During the onsite validation, the validation team observed that other 7 wind farm projects by the same PO will share one same gate meter with the proposed project together, thus parameters to be monitored for the project shall be further identified in the PDD.	<del>CAR-5</del>	OK
8.2 Is the measurement method clearly stated for each value to be monitored and deemed appropriate?	/1/ /5/ /9/	DR	Ditto.	<del>CAR-5</del>	OK
8.3 Are values of the ex-ante parameters / monitoring parameters selected correctly and conservative in accordance to methodology or tools?	/1/ /5/ /9/	DR	Ditto.	<del>CAR-5</del>	OK
8.4 Is the measurement equipment for each parameter described and deemed appropriate?	/1/ /5/ /9/	DR	Yes.		OK
8.5 Is the measurement accuracy addressed and deemed appropriate?	/1/ /5/ /9/	DR	The measurement accuracy shall be clarified.	<del>GL-4</del>	OK

8.6 Are procedures in place on how to deal with erroneous measurements <u>and</u> are the corrective actions identified?	/1/ /5/ /9/	DR	<p>Yes. Two bidirectional electricity meters (a main meter and a backup meter) will be installed to continuously measure the net electricity supplied to the NCPG ( facility ,y EG ). One electricity meter will be affixed to the output terminal of the Changshun booster station (the evaluation electric meter"). The other electricity meter (the "gateway electric meter") will be affixed to the input terminal of the grid company's substation.</p> <p>Both the two electricity meters are used to measure electricity supplied to and imported from the NCPG, and if there is something wrong with the gateway electricity meter, data from the evaluation electricity meter will be adopted for the calculation.</p>		OK
8.7 Is the frequency of measurement identified and deemed appropriate?	/1/ /5/ /9/	DR	See 8.1.	<del>CAR-5</del>	OK
8.8 Is the monitoring plan documented according to the approved methodology and in a complete and transparent manner?	/1/ /5/ /9/	DR	See 8.1.	<del>CAR-5</del>	OK
8.9 Are the sampling, measurement methods and procedures defined?	/1/ /5/ /9/	DR	Yes.		OK



8.10 Are procedures identified for maintenance of monitoring equipment and installations?	/1/ /5/ /9/	DR	Yes.		OK
8.11 Are the equipment calibration intervals identified and justified?	/1/ /5/ /9/	DR	Yes. The meter(s) of the Project will be calibrated according to national norms.		OK
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/ /5/ /9/	DR	Yes. The procedures are clearly identified and defined in the section B.7.2 of PDD.		OK
8.13 Are the monitoring arrangements described in the monitoring plan feasible within the project design?	/1/ /5/ /9/	DR	See 8.1.	CAR-5	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/ /5/ /9/	DR	Yes. After reviewed the PDD, the validation team can hereby confirm that the procedures are sufficient to ensure the emission reductions can be reported ex post and verified.		OK
8.15 Do the PPs make provisions for personnel training needs?	/1/ /5/ /9/	DR	Yes.		OK
8.16 Is the authority and responsibility of overall project management clearly described?	/1/ /5/ /9/	DR	Yes. The project management has been clearly described		OK

8.17 Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?	/1/ /5/ /9/	DR	There are no possible emergencies, related to the project activity, which would be able to cause direct unintended emissions.		OK
8.18 Are procedures identified for review of reported results/data?	/1/ /5/ /9/	DR	Yes.		OK
8.19 Is the data archiving period for this project activity stated in the PDD and appropriate?	/1/ /5/ /9/	DR	Yes. The monitoring data should be saved at the end of each month; the regular summary should be made and reported to technology department by statistician periodically; all the data should be saved up to 2 years after the end of the crediting period.		OK
<b>8.2 Monitoring of the leakage</b>					
8.2.1 Does the monitoring plan provide for the collection and archiving of all relevant data necessary for determining leakage?	/1/	DR	Project participants do not need to consider leakage in applying this methodology.		OK
8.2.2 Is the choice of project leakage indicators made according to selected methodology in a reasonable and conservative manner?	/1/	DR	Ditto.		OK
8.2.3 Is the measurement method clearly stated and deemed appropriate for each leakage value?	/1/	DR	Ditto.		OK
<b>9. Sustainable development</b>					
9.1 Does the LoA from the Host country DNA contain the confirmation that the proposed CDM project activity contributes to the sustainable development of the host Party?	/1/	DR	See 1.1.	<del>CAR-1</del>	OK

9.2 If PDD indicates any additional environmental benefits of the project, other than GHG emission reductions, were those benefits properly substantiated?	/1/	DR	Yes. Those benefits properly substantiated in FSR and EIA.		OK
<b>10. Stakeholders' consultation and comments</b>					
10.1 Were the stakeholders identified in appropriate and complete manner?	/1/ /25/	DR	Yes. The stakeholders identified for the project are the residents near the project. The owner made a survey on 15 March 2010. The survey was conducted through distributing and collecting responses to a questionnaire.		OK
10.2 Are the identified stakeholders plausible?	/1/ /25/	DR	Yes. The identified stakeholders included different ages, educational backgrounds and occupations, which reflected the local personnel structure appropriately.		OK
10.3 Does PDD describe the means being used to invite local stakeholder's comments?	/1/ /26/	DR	Yes. The project owner made a Survey Notification of the project on 08 March 2010 at the near villages.		OK
10.4 Were those means appropriate?	/1/ /25/	DR	Yes.		OK
10.5 Was the project presented to the stakeholders in unbiased manner?	/1/	DR	Yes.		OK
10.6 If a stakeholder consultation process is required by regulations/laws in the host country, has the stakeholder consultation process been carried out in accordance with such regulations/laws?	/1/	DR	Yes.		OK

10.7 Is a summary of the stakeholder comments provided in the PDD?	/1/	DR I	Yes.		OK
10.8 Has due account of any stakeholder comments been taken by PPs and reflected in the PDD?	/1/	DR	Yes.		OK
<b>11. Environmental impacts</b>					
11.1 Is the documentation supplied by the PPs regarding environmental impacts relevant and accurately reflected in the PDD?	/1/ /10/	DR	Yes. The environment impacts are reflected in the PDD.		OK
11.2 Is an environmental impact assessment (EIA) required for the CDM project activity?	/1/ /10/	DR I	The EIA is required before the project can be implemented.		OK
11.3 In case an EIA is required, has the EIA has been approved by local authorities and is the outcome accurately reflected in the PDD?	/1/ /10/	DR I	Yes. The EIA has been approved by local Environment Protection Bureau.		OK
11.4 Does the PDD include a brief description of the environmental effects of the project, including transboundary?	/1/ /10/	DR I	Yes. A brief description of the environmental effects has been described in section D.1 of the PDD.		OK
11.5 Are those effects properly addressed in the design of the project activity?	/1/ /10/	DR I	Yes. Those effects are properly addressed in the design of the project activity.		OK
11.6 Does the project comply with environmental legislation in the host country?	/1/ /10/	DR I	Yes. The project complies with environmental legislation of China. Moreover, the project EIA got approval from local authority.		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.

The wording of CAR/CL shall clearly address nonconformity or seek clarification, use / consultative language in order to prevent actual or perceived consultancy.

No.	CAR/CL	Observation (CAR/CL)	Reference (in Table 1)	Summary of project owner response	Validation team conclusion
1.	CAR 1	The letters of approval from the DNA of China and UK is to be provided.	1.1-1.7 2.2 9.1	The LoAs have been provided.	OK The Audit Team has received the letters of approval from the DNA of China and UK. The validity of LoAs has been verified by the Audit Team. CAR 1 is closed.
2.	CAR 2	The MoC of the project is to be provided.	1.6	The MoC of the Project has already been provided for review as the supporting document "CAR 2_MoC_Sandaogou".	OK The Audit Team checked the MoC and confirmed its authenticity. CAR 2 is closed.
3.	CAR 3	According to the equipment purchase, construction and installation contracts, the Validation Team identified that the starting date of the project is 20 April 2010. The	7.1.2	The starting date in the PDD has been corrected to 20 April 2010.	OK The Audit Team checked all equipment purchase, construction and installation

		starting date of the project in section B.5 of the PDD shall be corrected.			contracts and confirmed that the starting date of the project is 20 April 2010. PDD has been corrected. CAR 3 is closed.
4.	CAR 4	The result of IRR in the PDD is inconsistent with that in FSR and IRR spreadsheet. PDD is to be corrected.	7.3.4 7.3.9	The result of IRR in the GSP is wrong for typo mistake, which has been corrected in the revised PDD.	OK. CAR 4 is closed.
5.	CAR 5	During the onsite validation, the Audit Team observed that other 7 wind farm projects by the same PO will share one same gate meter with the proposed project together, thus parameters to be monitored for the project shall be further identified in the PDD.	8.1-8.3 8.7 8.8 8.13	The monitoring plan has been revised and further identified in section B.7 of PDD.	OK. The line monitoring diagram can be found in the revised PDD, which is considered credible based on the on-site assessment and inspection. As reflected in the technical agreements of main 220kV transformers involved in the project, the transformer loss are all verified less than 0.5%, thus the Audit Team team can consider the applied monitoring method of average weighting in the PDD is credible based on the expertise. In addition, the accuracies assumed in the project activity is verified in compliance with the standard of DL/T448-2000. CAR 5 is closed.
6.	CL 1	China Electric Power Yearbook 2010 was published in December 2010 and China Energy Statistical Yearbook 2010 was	5.5.4	Although the energy consumption data of power generation in 2009 was available from China Energy	OK. CL 1 is closed.

		published in January 2011, which are both available at the time of validation. Please Clarify why the latest data source wasn't used for calculation		Statistic Yearbook 2010 and power generation data in 2009 was available from China Electric Power Yearbook 2010 before the date of PDD for GSP, the electricity exchange between power grids in 2009 was not available before the date of PDD for GSP. But the data of electricity exchange between power grids aren't available. Moreover, the efficiency of power supply for coal, oil and gas aren't available. Therefore, the data of China Electric Power Yearbook 2010 and China Energy Statistical Yearbook 2010 couldn't be used for EF calculation. So, the EF in 2010 is reasonable and conservative.	
7.	CL 2	Please clarify further the applicability and the validity of the values from FSR, i.e. the supplied electricity, total investment, power tariff, each breakdown of O&M cost.	7.3.7	To further clarify the applicability and validity of the above input values, and to avoid the influence by the installed capacities and electricity generations of different projects, the plant load factor (PLF), the ratio of construction investment per electricity generation (Yuan/kWh), the ratio of annual O&M cost per construction investment (%), the ratio of annual O&M cost per electricity generation (Yuan/kWh), the ratio of annual other cost per annual O&M cost (%), and the ratio of annual other cost per electricity generation (Yuan/kWh) are adopted to compare with the similar CDM projects in the	OK The audit team checked the values, and confirmed that these values are valid and reasonable. CL 2 is closed.

				<p>Inner Mongolia Autonomus Region.</p> <p>The "similar CDM projects" here are defined as the wind farm projects with the capacity larger than 15 MW, registered as CDM projects applying methodology ACM0002, located in Inner Mongolia Autonomous Region where the Project located. This is because: in China, provincial governments are authorized to regulate wind power projects in the province by the NDRC; So the investment climate, tariff, land policy, regulations etc. are usually similar for wind power projects in the same province. Up to 26/09/2011, there are totally 146 similar CDM projects; and the comparison results of the key financial indicators are listed supporting document CL_1.</p> <p><b>Annual O &amp; M cost (including annual other cost):</b></p> <p>Annual O&amp;M cost comprises wage and welfare, maintenance cost, material fee, insurance fee and other costs (the term "other costs" refers to additional production expenses, administrative expenses and operating expenses, except depreciation, maintenance, insurance, wage and welfare), which was</p>	
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				<p>studied by independent third party research institute based on the "Codes on Compiling Feasibility Study Report of Wind Farms" issued by NDRC on 25/05/2005 and "Economic assessment method and parameters for construction projects", 3<sup>rd</sup> edition.</p> <p>Compared with other similar CDM projects:</p> <ul style="list-style-type: none"><li>• the ratio of annual O&amp;M cost per construction investment of 2.60% falls in to the range of 1.13% ~ 4.12%;</li><li>• the ratio of annual O&amp;M cost per electricity generation of 0.11 Yuan/kWh falls into the range of 0.0480 ~ 0.1776 Yuan/kWh;</li><li>• the ratio of annual other cost per annual O&amp;M cost of 17.51% falls into the range of 2.05% ~ 39.13%;</li><li>• and the ratio of annual other cost per electricity generation of 0.0199 Yuan/kWh falls into the range of 0.0022 ~ 0.0400 Yuan/kWh.</li></ul> <p>Besides, based on the Price Index from 2003 to 2010 in the below two tables, it is indicated that Chinese economy is experiencing a relatively high inflation. Based on the data</p>	
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				<p>published by the Statistics Bureau of both PRC and Inner Mongolia Autonomous Region, there is an increasing tendency of the prices of manufactured goods, raw material, fuel &amp; power, investment in fixed assets, consumer goods. All these situations will lead both the annual O&amp;M cost and the construction investment gradually increasing.</p> <p><b>Investment cost:</b></p> <p>The estimated construction investment for the proposed Project activity is 435.24 million RMB, and the ratio of construction investment per electricity generation is 4.38 Yuan/kWh, well within the range of 3.0114 ~ 5.2621 Yuan/kWh compared with the other similar CDM projects listed in table 6.</p> <p>Besides, based on the Price Index from 2003 to 2010 in the above two tables, the increasing tendency of the prices of manufactured goods, raw material, fuel &amp; power, investment in fixed assets and consumer goods etc. will lead the construction investment gradually increasing. According to the current major contracts already signed of the proposed Project, the total amount has</p>	
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				<p>reached 441.12 million RMB, and the respective ratio of contract amount of construction investment per electricity generation is 4.44 Yuan/kWh, higher than the estimated construction investment in FSR and PDD but still well within the range of 3.0114 ~ 5.2621 Yuan/kWh compared with the other similar CDM projects listed in table 6.</p> <p>Therefore, the construction investment applied in the PDD is reasonable.</p> <p><b>Electricity tariff:</b></p> <p>The applied electricity tariff of the Proposed project is taken from FSR as 0.51 RMB/kWh, which tariff has also been approved by the Development and Reform Commission of Inner Mongolia Autonomous Region on 14/01/2011 (Nei Fa Gai Jia Zi [2011]60). The approved tariff is implemented by the project owner and the grid company.</p> <p>Before the implementation of the project, when the Project owner was making the decision whether to implement the proposed Project or not, the</p>	
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				<p>on-grid electricity tariff of the Project could only be estimated based on the on-grid tariff of similar wind farms in the same region already issued. The electricity generated by the proposed Project will be supplied to West Inner Mongolia Power Grid, and the the North China Power Grid (NCPG). Besides, the on-grid tariff of wind farms issued by NDRC were determined according to the provincial level and the power grid structure. Hence, the West Inner Mongolia Power Grid is defined as the reference region.</p> <p>Before the time of completion of FSR in February 2011 and the board decision in March 2011, the tariff of wind farm projects in West Inner Mongolia issued by NDRC on July 20<sup>th</sup> 2009 was used as the latest available tariff policy, which is also 0.51 RMB/kWh (including VAT).</p> <p>With the implementation of "Renewable Energy Law" and "Interim Regulation for Tariff of Renewable Energy Power generation and Appointment of Expense" in 2006, the grid power</p>	
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				price of renewable energy generation projects shall be determined by the pricing authorities of the State Council. Namely, the tariff of renewable energy is guided by the government. And once determined, the tariff of a project will be strictly regulated by the government; neither the project owner nor the grid company can change it. Since June 2007, the tariff in West Inner Mongolia has indeed been maintained at 0.51 RMB/kWh in four tariff notifications issued by NDRC.	
8.	CL 3	The completeness of the data source in the common practice analysis and the essential distinctions between the CDM project activity and the other similar activities should be clarified further.	7.5.4 7.5.5	<p><i>Data source:</i></p> <p><i>Statistics of Windfarm Installed Capacities in China 2007, 2008 and 2009, Chinese Wind Energy Association.</i></p> <p><a href="http://www.cwea.org.cn/download/display_list.asp?cid=2">http://www.cwea.org.cn/download/display_list.asp?cid=2</a></p> <p><i>NDRC China:</i></p> <p><a href="http://cdm.ccchina.gov.cn/web/index.asp">http://cdm.ccchina.gov.cn/web/index.asp</a></p>	<p>OK</p> <p>The audit team checked "Statistics of domestic wind farm installation capacity in 2007, 2008 and 2009, and confirmed that the data source is latest and completed.</p> <p>CL 3 is closed.</p>
9.	CL 4	The measurement accuracy shall be clarified.	8.5	<p>It has been revised, see PDD B.7.2.</p> <p>An agreement should be signed between the project owner and Power Grid Company that defines the metering arrangements and the required quality control procedures to ensure accuracy.</p> <p>The metering equipments for electricity are installed at the</p>	<p>OK</p> <p>The Audit Team verified the project using Technical administrative code of electric energy metering (DL/T 448-2000)</p> <p>CL 4 is closed.</p>

				<p>transformer station. The monitoring meters will be properly configured and calibrated annually. The metering equipments will be checked by the project owner and Power Grid Company before operation.</p> <p>The monitoring meters with accuracy 0.2s are bidirectional. The project owner and Power Grid Company shall jointly prepare an estimate of the correct reading and provide ample evidence to DOE that the method is reasonable when the two meters have errors. Project electricity supplied to NCPG substation will also be monitored by Grid Company. Electricity sales receipts will be provided for verification each year.</p>	
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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
No			

## Appendix B

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### CERTIFICATES OF COMPETENCE

## Qualification

Tan, Yi /

### Emission Trading

#### United Nations Framework Convention on Climate Change

Auditor No. :  
(AuditorenRegNr)

Appointed:  
(Zugelassen)

☒ ja

Qualification Level: Auditor  
(Qualifikationsstufe)

External:  
(Externer)

☐ ja

Add. reviewer: ☐ yes  
(Zus-tzlicher Prüfer)

EAC Scopes:  
(EAC Branchen)

CDM 01 – Energy industries (renewable – / non-renewable sources)  
CDM 13 – Waste handling and disposal

Add. qualification:  
(zus. Qualifikation)

First Appointment: 2009-09-26  
(Erstberufung)

Valid to: 2012-09-25  
(Gültig bis)

Remarks: CDM 01 limited to TA1.2 – Renewable Energies  
CDM 13 limited to TA 13.1- Waste handling & disposal

Languages: Chinese  
English  
Japanese

### Experience Exchange

Date

Location

Remarks

Accredita

### Monitoring

Latest Monitoring:  
(letzte Beurteilung)

Next  
Monitoring:  
(n-chste  
Beurteilung)

Remarks:

### History of scope allocation

Date: 2009-09-27



Change: EAC CDM, CDM added  
By: Manfred Brinkmann  
Reason:

## History

Created:	2008-03-18 13:50:31	Daxun Li/Bj/Chn/TUV
Modified:	2011-01-13 15:17:56 ZE9	Manfred Brinkmann/Jpn/TUV
	2011-01-13 15:17:19 ZE9	Manfred Brinkmann/Jpn/TUV
	2011-01-13 15:17:00 ZE9	Manfred Brinkmann/Jpn/TUV
	2010-09-13 15:01:43 ZE9	Manfred Brinkmann/Jpn/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: ☒ yes  
(Zus-tzlicher Prüfer)

EAC Scopes:  
(EAC Branchen)

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

Add. qualification:  
(zus. Qualifikation)

First Appointment: 2010-10-09  
(Erstberufung)

Valid to: 2013-10-08  
(Gültig bis)

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

Languages:

### Experience Exchange

Date

Location

Remarks

Accredita

### Monitoring

Latest Monitoring:  
(letzte Beurteilung)

Next  
Monitoring:  
(n-chste  
Beurteilung)

Remarks:

### History of scope allocation

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

## History

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