



VERIFICATION REPORT CARBON RESOURCE MANAGEMENT LTD.

VERIFICATION OF THE CGN INNER MONGOLIA ZHURIHE PHASE I WIND FARM PROJECT

REPORT No. **BVC/CHINA-VR8037/2011**
REVISION No.01

BUREAU VERITAS CERTIFICATION

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VERIFICATION REPORT

Date of first issue: 30/08/2012	Organizational unit: Bureau Veritas Certification Holding SAS
Client: Carbon Resource Management Ltd.	Client ref.: Ms. Qian Yiwen

Summary:

Bureau Veritas Certification has conducted the 1st periodic verification of CGN Inner Mongolia Zhurihe Phase I Wind Farm Project, CDM Registration Reference Number 1577, owned by CGN Wind Power Co., Ltd., located in Zhurihe Town, Xilinguole City, Inner Mongolia Autonomous Region, P.R. China and applying the methodology ACM0002 version 07, on the basis of UNFCCC criteria for the CDM, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, the CDM rules and modalities and the subsequent decisions by the CDM Executive Board, as well as the host country criteria.

The verification scope is defined as a periodic independent review and ex post determination by the Designated Operational Entity of the monitored reductions in GHG emissions during defined verification period, and consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up on-site visit and interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion. The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

The first output of the verification process is a list of Clarification, Corrective Actions Requests, Forward Actions Requests (CLs, CARs and FARs), presented in Appendix A.

In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in accepted revised project design documents. Installed equipments being essential for generating emission reduction run reliably and are calibrated appropriately. The monitoring system is in place and the project is generating GHG emission reductions. The GHG emission reductions are calculated without material misstatements, and the emission reductions verified totalize 144,678 tons of CO₂e for the monitoring period.

Our opinion relates to the Projects' GHG emission and resulting GHG emission reductions reported and related to the valid and registered project baseline, monitoring plan and its associated documents.

Reporting period: 23/12/2009 to 28/02/2011

Baseline emissions: 144,678 tCO₂ equivalents.

Project emissions: 0 tCO₂ equivalents.

Leakage: 0 tCO₂ equivalents.

Emission Reductions: 144,678 tCO₂ equivalents.

Report No.: BVC-China/VR8037/2011	Subject Group: CDM
Project title: CGN Inner Mongolia Zhurihe Phase I Wind Farm Project	
Work carried out by: Mr. Liao Ling Team Leader	
Internal Technical Review carried out by: Mr. Tim Wang Wei	
Date of this revision: 19/09/2012	Rev. No.: 01
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Work approved by:

Mr. Flavio Gomes


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Abbreviations

BVC	Bureau Veritas Certification
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
DRR	Daily Reading Record
ETN	Electricity Transaction Note
FAR	Forward Action Request
GHG	Green House Gas(es)
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
MRR	Monthly Reading Record
NCPG	North China Power Grid
PDD	Project Design Document
PDR	Preliminary Design Report
PLF	Plant Load Factor
PP	Project Participant
PPA	Power Purchase Agreement
TGL	Turbine Generation Log
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual
WTG	Wind Turbine Generator



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1 INTRODUCTION

Carbon Resource Management Ltd. has commissioned Bureau Veritas Certification to verify the emissions reductions of the CDM project CGN Inner Mongolia Zhurihe Phase I Wind Farm Project (hereinafter referred to as “the Project”) owned by CGN Wind Power Co., Ltd. (the project owner, hereinafter referred to as “the PP”) in Zhurihe Town, Xilinguole City, Inner Mongolia Autonomous Region, P.R. China.

This report summarizes the findings of the verification of the Project, performed on the basis of UNFCCC criteria, as well as criteria given to provide for consistent project operations, monitoring and reporting.

1.1 Objective

In carrying out its verification work, the DOE shall ensure that the project activity complies with the requirements of paragraph 62 of the CDM modalities and procedures.

Based on the applicable requirements of paragraph 62 of the CDM modalities and procedures, this assessment shall:

- (a). Ensure that the project activity has been implemented and operated as per the accepted revised PDD and that all physical features (technology, project equipment, and monitoring and metering equipment) of the project are in place;
- (b). Ensure that the monitoring report and other supporting documents provided are complete in accordance with latest applicable version of the completeness checklist for requests for issuance of CERs and verifiable and in accordance with applicable CDM requirements;
- (c). Ensure that actual monitoring systems and procedures comply with the monitoring systems and procedures described in the monitoring plan and the approved methodology;
- (d). Evaluate the data recorded and stored as per the monitoring methodology.

1.2 Scope

The verification scope is defined as an independent and objective review of the project design document, the project's baseline study and monitoring plan and other relevant documents. The information in these documents is reviewed against Kyoto Protocol requirements, UNFCCC rules and associated interpretations.

The verification is not meant to provide any consulting service towards the PPs. However, stated requests for clarifications and/or corrective actions may provide input for improvement of the project monitoring towards reductions in the GHG emissions.

1.3 GHG Project Description

The Project managed by CGN Wind Power Co., Ltd. is located in Zhurihe Town, Xilinguole City, Inner Mongolia Autonomous Region, P.R. China. The coordinates are longitude of 112°46'30"E and latitude of 42°27'40"N. The Project consists of 25 sets of 2000kW wind turbines. The total installed capacity of the Project activity is 50MW. The electricity is exported to the North China Power Grid (NCPG).

The Project has been registered on 23/12/2009 (UNFCCC Registration reference: 1577) under approved CDM methodology ACM0002 version 07 “Consolidated Baseline and Monitoring Methodology for Grid-Connected Electricity generation from Renewable Sources”. The Project has chosen the renewable crediting period in the registered PDD and the accepted revised PDD; the first crediting period is from 23/12/2009 to 22/12/2016. This is the 1st monitoring period from 23/12/2009 to 28/02/2011, which is within the first crediting period.

Brief information of the Project was listed as below:

Project title:	CGN Inner Mongolia Zhurihe Phase I Wind Farm Project
UNFCCC ref number:	1577
Registration Date:	23/12/2009
Crediting Period:	23/12/2009 - 22/12/2016 (Renewable)
Monitoring Period:	23/12/2009 to 28/02/2011
Project Participants:	CGN Wind Power Co., Ltd. (Host party: China)
	Carbon Resource Management Ltd (Annex I party: United Kingdom of Great Britain and Northern Ireland)
	Carbon Resource Management S.A. (Annex I party: Switzerland)
Methodologies used	ACM0002 version 07
Location of the Project:	Zhurihe Town, Xilinguole City, Inner Mongolia Autonomous Region, P.R. China
Geo coordinates:	Longitude: 112°46'30"E, Latitude: 42°27'40"N
UNFCCC link:	http://cdm.unfccc.int/Projects/DB/DNV-CUK1200642678.34/view

1.4 Verification Team and Internal Technical Reviewer

The verification team and internal technical reviewer consist of the following personnel:

FUNCTION	NAME	CODE HOLDER	TASK PERFORMED*
Team Leader	Mr. Liao Ling	☒ Yes ☐ No	☒ DR ☒ SV ☒ RI
Team Member	N.A	☐ Yes ☐ No	☐ DR ☐ SV ☐ RI
Technical Specialist	N.A.	☐ Yes ☐ No	☐ DR ☐ SV ☐ RI
Internal Technical Reviewer (ITR)	Mr. Tim Wang Wei	☒ Yes ☐ No	☒ DR ☐ SV ☐ RI
Specialist supporting ITR	N.A.	☐ Yes ☐ No	☐ DR ☐ SV ☐ RI

*DR = Document Review; SV = Site Visit; RI = Report issuance

2 METHODOLOGY

The overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.

In order to ensure transparency, a verification protocol was customized for the project, according to the version 01.2 of the Clean Development Mechanism Validation and Verification Manual, issued by CDM Executive Board at its 55th meeting on 30/07/2010 (Ref-8). The protocol shows, in a transparent manner, criteria (requirements), means of verification and the results from verifying the identified criteria. The verification protocol serves the following purposes:

- It organizes, details and clarifies the requirements a CDM project is expected to meet;
- It ensures a transparent verification process where the verifier will document how a particular requirement has been verified and the result of the verification.

The completed verification protocol is enclosed in Appendix A to this report.

2.1 Review of Documents

The verification of the project documentation provided by the project participant is based upon both quantitative and qualitative information on emission reductions. Quantitative information comprises the reported numbers in the monitoring report (MR) version 2.0 dated 13/08/2012 submitted to the DOE. Qualitative information comprises information on internal management controls, calculation procedures, procedures for transfer of data, frequency of emissions reports, and review and internal audit of calculations.

The monitoring report submitted by the project participant was also web hosted on the UNFCCC-CDM web site on 11/04/2011 and thus, was available in the public domain.

In addition to the monitoring documentation provided by the project participants, the DOE reviews:

- a) The registered PDD, revised PDD, including the monitoring plan and the corresponding validation reports; (Ref-1, Ref-2, Ref-3, Ref-4)
- b) The applied monitoring methodology; (Ref-7)
- c) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board; (Ref-9)
- d) Other information and references relevant to the project activity's resulting emission reductions (e.g. national regulations). (Ref-24, Ref-25)

2.2 Follow-up Interviews

On 05/05/2011, Bureau Veritas Certification performed an on-site visit and interviews with project stakeholders to confirm selected information and to resolve issues identified in the document review. Representatives of the CGN Wind Power Co., Ltd. and the Carbon Resource Management S.A. were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
CGN Wind Power Co., Ltd. (the PP)	➤ Project Design and implementation ➤ Technical equipment, calibration and operation ➤ Monitoring Plan and management procedures ➤ Monitoring data ➤ Data uncertainty and residual risks (QA/QC) ➤ GHG Calculation ➤ Environmental Impacts ➤ Compliance with National Laws and Regulations
Carbon Resource Management S.A. (the Consultant)	➤ Monitoring Plan ➤ Monitored data and Monitoring Report ➤ GHG Calculations

2.3 Resolution of Clarification, Corrective and Forward Action Requests

The objective of this phase of the verification is to raise the requests for corrective actions and clarification and any other outstanding issues that needed to be clarified for Bureau Veritas Certification positive conclusion on the GHG emission reduction calculation.



Findings established during the verification can either be seen as a non-fulfilment of criteria ensuring the proper implementation of a project or where a risk to deliver high quality emission reductions is identified.

Corrective Action Requests (CARs) are issued, where:

- (a). Non-conformities with the monitoring plan or methodology are found in monitoring and reporting, or if the evidence provided to prove conformity is insufficient;
- (b). Mistakes have been made in applying assumptions, data or calculations of emission reductions which will impair the estimate of emission reductions;
- (c). Issues identified in a FAR during validation or previous verification to be verified during this verification have not been resolved by the project participants.

Forward Action Requests (FARs) are issued, for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.

The verification team may also use the term Clarification Requests (CLs), if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

To guarantee the transparency of the verification process, the concerns raised are documented in more detail in the verification protocol in Appendix A.

2.4 Internal Technical Review

The verification report underwent an Internal Technical Review (ITR) before requesting issuance of CERs for the project activity.

The ITR is an independent process performed to examine thoroughly that the process of verification has been carried out in conformance with the requirements of the verification scheme as well as internal Bureau Veritas Certification procedures.

The Team Leader provides a copy of the verification report to the reviewer, including any necessary verification documentation. The reviewer reviews the submitted documentation for conformance with the verification scheme. This will be a comprehensive review of all documentation generated during the verification process.

When performing an Internal Technical Review, the reviewer ensures that:

- The verification activity has been performed by the team by exercising utmost diligence and complete adherence to the CDM rules and requirements.
- The review encompasses all aspects related to the project which includes project design, baseline, additionality, monitoring plans and emission reduction calculations, internal quality assurance systems of the project participant as well as the project activity, review of the stakeholder comments and responses, closure of CARs, CLs and FARs during the verification exercise, review of sample documents.

The reviewer compiles clarification questions for the Team Leader and Verification Team and discusses these matters with Team Leader.

After the agreement of the responses on the 'Clarification Request' from the Team Leader as well as the PP(s) the finalized verification report is accepted for further processing such as uploading on the UNFCCC webpage.

3 VERIFICATION CONCLUSIONS

In the following sections, the conclusions of the verification are stated.



The findings from the desk review of the original monitoring documents and the findings from interviews during the follow up visit are described in the Verification Protocol in Appendix A.

The Clarification, Corrective and Forward Action Requests are stated, where applicable, in the following sections and are further documented in the Verification Protocol in Appendix A. The verification of the Project resulted in **2** Correction Action Requests and **1** Clarification Request.

The CARs, CLs and FARs were closed based on adequate responses from the Project Participant(s) which meet the applicable requirements. They have been reassessed before their formal acceptance and closure.

The number between brackets at the end of each section corresponds to the VVM paragraph.

3.1 Remaining issues from previous validation/verification (190)

All CARs and CLs raised were successfully closed during the validation stage and this is the 1st period verification, no remaining issues were left.

3.2 Project implementation in accordance with the registered project design document (198)

Bureau Veritas Certification has performed an on-site visit and found that all facilities and equipments including 25 sets wind turbines with a unit capacity of 2000kW (type BZD80-2000 manufactured by Beijing Beizhong Stream Turbine Generator Co., Ltd) as described in the accepted revised PDD are in place and have been in operation during the monitoring period, the total installed capacity is 50MW. The electricity generated by the Project has been delivered properly to the North China Power Grid as per the provision stated in the Power Purchase Agreement signed with the grid company. (Ref-10 & Ref-11)

The project facilities and generation records of the turbines were verified during the on-site visit and found to be substantial and consistent with the description of the accepted revised PDD. Bureau Veritas Certification has verified the nameplates of the turbines, and then can confirm the turbine is supplied by Beijing Beizhong Stream Turbine Generator Co., Ltd., which is consistent with the accepted revised PDD (Ref-2).

According to the Turbine commissioning records, the construction of the Project was starting on 01/05/2008; the Project was commissioned on 04/03/2009 before the date of CDM registration, and all the wind turbines have been put into operation gradually till 13/04/2009. (Ref-12)

The unit capacity of turbine, number of turbines and actual installed capacity of the Project are changed from the description in the registered PDD. A notification of changes has been requested for the Project and accepted by the CDM EB on 19/06/2012.

Information provided in the Monitoring Report is in accordance with that stated in the registered PDD. Further analysis of monitored parameters as reported in the Monitoring Report compared to those estimated in the PDD is developed in section 3.5 of this report.

[Power System] (Ref-10 & Ref-11)

The Project shares the same transformer, substation and main transmission line to the grid with another wind farm (CGN Inner Mongolia Zhurihe Phase II Wind Farm Project, UNFCCC Ref. 3453, hereafter referred to as "project 3453"). The electricity generated by the Project is transmitted to the transformer at the on-site substation via four transmission lines, after merging the electricity generated by the project 3453 (project 3453 transmits electricity the transformer via other four transmission lines) at the transformer, the electricity is exported to the North China Power Grid (NCPG).

[Metering System] (Ref-10 & Ref-11)



There is an electricity meter installed at each transmission line that connected the Project to the transformer to monitor the electricity export to the transformer by the Project (meter M1 to M4 respectively); and four electricity meters to monitor the electricity export to the transformer by the project 3453 (meter M5 to M8). Besides these eight meters, there are two meters (one as main meter and the other as backup) installed at the on-site substation to monitor the electricity exported to and imported from the grid by both the two projects.

[Management and Operation] (Ref-2, Ref-22)

The PP has operated the Project as per accepted revised PDD. The monitoring organization has been set up and all monitoring staffs have been trained. The electricity is continuously monitored and monthly recorded; the cut off time is 24:00 on the last day of every month. The readings of the meters are monthly recorded by the grid company and the PP, (Ref-14) the grid company issues Electricity Transaction Notes (ETNs) being sales receipt to the PP to confirm the records. (Ref-15) Monitoring & Management Manual and Monitoring training records have been provided and verified by Bureau Veritas Certification. (Ref-22, Ref-23)

Information provided in the MR is in accordance with that stated in the accepted revised PDD. Further analysis of monitored parameters as reported in the MR compared to those estimated in the PDD is developed in section 3.5 of this report.

✎ Corresponding to the paragraph 198 of VVM version 01.2, Bureau Veritas Certification can confirm that:

- The implementation of the Project is consistent with the accepted revised PDD.
- The Project is operated as per the accepted revised PDD by the PP.
- Information provided in the MR is in accordance with that stated in the accepted revised PDD.

3.3 Compliance of the monitoring plan with the monitoring methodology (203)

✎ Corresponding to the paragraph 203 of VVM version 01.2, Bureau Veritas Certification has verified the validated monitoring plan, including the data and parameters required to be monitored, measurement procedures, monitoring frequency and QC/QA procedures as described in the accepted revised PDD, and is able to confirm that the monitoring plan is in accordance with the approved methodology applied by the Project.

3.4 Compliance of monitoring with the monitoring plan (206)

Monitoring has been carried out in accordance with the monitoring plan contained in the accepted revised PDD.

Parameters and information flow

The parameters required by the monitoring plan and the way the Verification Team has verified the information flow (from data generation, aggregation, to recording, calculation and reporting for these parameters) including the values in the monitoring reports are described below:

EG_y Net electricity supplied to the grid by the project

The main meter installed at the on-site substation is a bidirectional meter which can measure the electricity exported to the grid (TEG_y) and the electricity imported from the grid (CEG_y) by both the two projects.

Because the Project shares the transformer and the main meter with the project 3453, according to the monitoring plan contained in the accepted revised PDD, the net electricity supplied to the grid by the project is determined by the following formula:

$$EG_y = EG_{\text{project}} = EG_{\text{total}} * E_{\text{project}} / (E_{\text{project}} + E_{\text{others}})$$

$$EG_{\text{total}} = TEG_y - CEG_y$$

Where:

EG_{total} is the net electricity supplied to the grid based on the data metered by the main meter;

E_{project} is the electricity generation from the project activity metered by the separate meters (meter M1 to M4);

E_{others} is the electricity generation from other project (in this monitoring period it is the project 3453) metered by the other separate meters (meter M5 to M8).

TEG_y the electricity exported to the grid by both the two projects

CEG_y the electricity imported from the grid by both the two projects

The readings of the all meters are monitored continuously and recorded monthly by the PP and the grid company. The cut off time is 24:00 on the last day of every month. NCPG issues electricity sales receipts (ETNs) to the PP to confirm the meter readings and the net electricity supplied to the grid by the project. The grid company and the PP recorded and confirmed the readings on 23/12/2009 on which the Project was registered, and the grid company issued a special ETN for that month.

The verification team has verified the values provided in the monitoring report and ER spreadsheet against the relevant documented evidences i.e. the MRRs (Ref-14) and the ETNs (Ref-15) and found them to be consistent with the evidences. The MRRs and the ETNs can cover this monitoring period from 23/12/2009 to 28/02/2011.

Parameters determined ex-ante:

1) $EF_{\text{grid,CM,y}}$, emission factor of the grid

The emission factor of the 1st crediting period of the Project has been determined ex-ante in the accepted revised PDD (Ref-2). The emission factor used in the monitoring report has been verified against the accepted revised PDD (Ref-2) and found them to be consistent.

[Calibration]

The accuracy of the two meters installed at the on-site substation is 0.2S, and the accuracy of the eight meters installed for the Project and the project 3453 is 0.5S, which is in accordance the Monitoring Plan. (Ref-2)

The calibrations of the meter have been verified and found in line with national regulation and the monitoring plan contained in the accepted revised PDD (Ref-2, Ref-17, Ref-18, Ref-25).

Table 2 Calibration Certificates of meters

Meter ID	SN	Accuracy Class	Calibration date	Validity	Calibration entity
Main meter	95 232 541	0.2S	26/02/2009	Yes	A
			23/02/2010		
			07/02/2011		
Backup meter	95 232 545	0.2S	27/02/2009	Yes	A
			23/02/2010		
			07/02/2011		
M1	96716256	0.5S	07/10/2009	Yes	B
			06/10/2010		
M2	96716255	0.5S	07/10/2009	Yes	B
			06/10/2010		

Meter ID	SN	Accuracy Class	Calibration date	Validity	Calibration entity
M3	96716257	0.5S	07/10/2009	Yes	B
			06/10/2010		
M4	94316656	0.5S	07/10/2009	Yes	B
			06/10/2010		
M5*	96716250	0.5S	04/01/2010	Yes	B
			03/01/2011		
M6	96716251	0.5S	04/01/2010	Yes	B
			03/01/2011		
M7	96716259	0.5S	04/01/2010	Yes	B
			03/01/2011		
M8	96716254	0.5S	04/01/2010	Yes	B
			03/01/2011		

* Calibration entity A: Electric Measurement Inspect Centre of Inner Mongolia Electric Science Research Institute, certificate code (Meng) Fa Ji (2009) No. 15021 with valid period 02/01/2009 to 01/01/2014. (Ref-18)

Calibration entity B: Certificate of authorization for Electricity Measuring Centre of Xilinguole Electricity Power Bureau (Code: (Meng) Fa Ji (2009) No. 15032) with valid period 02/01/2009 to 01/01/2014 (Ref-19)

* The project 3453 was commissioned from 06/01/2010 (Ref-13); and the meter M5 to M8 were put into operation since 06/01/2010. (Ref-20, Ref-21)

The monitoring plan requires that the accuracy of the electricity meters is at least 0.5S (error resulting from the electricity meters shall not exceed 0.5% of full scale rating), and the meters should be calibrated by authorized entity periodically according to industry standards; the installation and calibration of electricity meters complied with the monitoring plan.

Bureau Veritas Certification has verified the calibration certificates issued by the calibration entities and certificates of calibration entities (Ref-17, Ref-18), all the meters meet the rated accuracy level as described in the monitoring plan and are in compliance with the industry standard Technical Administrative Code of Electric Energy Metering (DL/T 448-2000) (Ref-24). The calibration frequency fulfils the requirement as described in the monitoring plan and is in compliance with the national standard Verification Regulation of Electrical Energy Meter with Electronics (JJG 596-1999) (Ref-25).

☞ Corresponding to the paragraph 206 of VVM version 01.2, Bureau Veritas Certification can confirm that:

- The monitoring has been carried out in accordance with the monitoring plan contained in the accepted revised PDD.
- All parameters stated in the Monitoring Plan have been sufficiently monitored and correctly listed. The monitored data for required parameters have been verified and found complete and consistent by checking the whole procedure for information aggregation.

3.5 Assessment of data and calculation of greenhouse gas emission reductions (209)

A complete set of data for the specified monitoring period is available.

The critical parameter used for the determination of the emission reductions is the net electricity supplied to the grid by the Project. The data pertaining to the above parameters are maintained in the identified records. All the data are in compliance with the figures stated in the Monitoring Report version 2.0.

As per the methodology ACM0002 version 07 and the accepted revised PDD, the emission reductions for the Project are calculated as the baseline emissions minus the project emissions and leakage. Hence the emission reduction is determined by the following formula:

$$ER_y = BE_y - PE_y - L_y$$

Where,

ER_y : Emission reductions

BE_y : Baseline emissions

PE_y : Project emissions

L_y : Emissions due to leakage

[Baseline Emissions]

The baseline emissions are the baseline emission reductions factor times the net electricity supplied to the grid. Therefore,

$$BE_y = EG_y \times EF_{\text{grid,CM,y}}$$

$EF_{\text{grid,CM,y}}$: GHG emission factor of the North China Power Grid (NCPG), calculated ex-ante in the registered and accepted revised PDD as 1.0548tCO₂e/MWh.

EG_y : Net electricity supplied to the grid by the Project

According to the Monitoring Plan of the accepted revised PDD of the Project, the net electricity supplied to the grid (EG_y) can be calculated as:

$$EG_y = EG_{\text{project}} = EG_{\text{total}} \times E_{\text{project}} / (E_{\text{project}} + E_{\text{others}})$$

$$EG_{\text{total}} = TEG_y - CEG_y$$

Where:

EG_{total}	is the net electricity supplied to the grid based on the data metered by the main meter;
E_{project}	is the electricity generation from the project activity metered by the separate meters (meter M1 to M4);
E_{others}	is the electricity generation from other project (in this monitoring plan it is the project 3453) metered by the other separate meters (meter M5 to M8).
TEG_y	the electricity exported to the grid by both the two projects
CEG_y	the electricity imported from the grid by both the two projects

Bureau Veritas Certification has cross checked the MRRs (Ref-14) with the ETNs (Ref-15) issued by the grid company for the period from 23/12/2009 to 28/02/2011. The conservative values are used for the emission reductions calculation. The verified values are shown in the following Tables.

Table 3 Electricity supplied to the grid by the Project monitored by meter M1 to M4 (MWh)

Period		M1	M2	M3	M4	E_{project}
From	To	A	B	C	D	$E=A+B+C+D$
23/12/2009	31/12/2009	658.67	815.85	836.38	620.46	2,931.36
01/01/2010	31/01/2010	4,427.16	4,587.01	4,369.64	3,881.38	17,265.19
01/02/2010	28/02/2010	1,896.02	1,943.01	1,509.57	1,839.82	7,188.42



01/03/2010	31/03/2010	3,444.49	3,985.88	3,822.39	3,346.30	14,599.06
01/04/2010	30/04/2010	1,925.97	3,289.58	3,082.83	2,901.08	11,199.46
01/05/2010	31/05/2010	2,656.71	3,931.81	3,898.35	3,208.23	13,695.10
01/06/2010	30/06/2010	1,010.19	1,581.06	844.98	1,825.21	5,261.44
01/07/2010	31/07/2010	987.86	1,279.01	1,069.65	971.94	4,308.46
01/08/2010	31/08/2010	1,146.10	1,052.64	1,082.19	1,455.16	4,736.09
01/09/2010	30/09/2010	1,115.58	1,577.43	1,374.66	1,515.20	5,582.87
01/10/2010	31/10/2010	2,295.10	2,657.58	2,748.93	1,478.80	9,180.41
01/11/2010	30/11/2010	3,779.27	4,232.50	3,774.17	3,615.46	15,401.40
01/12/2010	31/12/2010	2,281.84	2,596.51	2,514.91	2,978.64	10,371.90
01/01/2011	31/01/2011	2,123.91	3,003.96	3,599.69	3,347.30	12,074.86
01/02/2011	28/02/2011	1,768.03	1,532.10	1,664.26	2,087.67	7,052.06

Table 4 Electricity generated by the project 3453 monitored by meter M5 to M8 (MWh)

Period		M5	M6	M7	M8	E _{others}
From	To	F	G	H	I	J=F+G+H+I
23/12/2009	31/12/2009	0.00	0.00	0.00	0.00	0.00
01/01/2010	31/01/2010	2,185.78	4,038.14	1,929.32	2,069.21	10,222.45
01/02/2010	28/02/2010	2,095.78	4,110.14	2,321.36	2,005.99	10,533.27
01/03/2010	31/03/2010	2,581.74	2,075.97	4,099.46	3,404.27	12,161.44
01/04/2010	30/04/2010	3,876.51	3,745.21	3,442.59	2,780.74	13,845.05
01/05/2010	31/05/2010	3,064.59	3,242.26	3,213.94	6,108.63	15,629.42
01/06/2010	30/06/2010	2,825.78	2,818.61	1,256.05	1,563.74	8,464.18
01/07/2010	31/07/2010	1,521.22	1,518.29	1,220.21	1,178.56	5,438.28
01/08/2010	31/08/2010	1,155.47	949.71	1,462.53	1,130.15	4,697.86
01/09/2010	30/09/2010	1,276.86	1,185.01	896.58	1,572.15	4,930.60
01/10/2010	31/10/2010	1,642.44	1,708.02	2,510.92	1,878.60	7,739.98
01/11/2010	30/11/2010	2,340.41	2,651.28	4,628.08	4,547.63	14,167.40
01/12/2010	31/12/2010	4,218.88	4,357.84	2,468.38	2,923.69	13,968.79
01/01/2011	31/01/2011	2,936.16	3,182.19	2,627.11	3,394.84	12,140.30
01/02/2011	28/02/2011	2,899.32	3,107.50	1,462.73	2,132.65	9,602.20

Table 5 Total net electricity supplied to the grid by the Project and project 3453 (MWh)

Period		TEG _y		CEG _y		EG _{total} O=Min(K,L)- Max(M,N)
		MRR	ETN	MRR	ETN	
From	To	K	L	M	N	
23/12/2009	31/12/2009	2,849.82	2,849.82	22.26	22.26	2,827.56
01/01/2010	31/01/2010	26,903.67	26,903.67	162.11	162.11	26,741.56
01/02/2010	28/02/2010	17,315.55	17,315.55	193.04	193.04	17,122.51
01/03/2010	31/03/2010	26,067.13	26,067.13	54.87	54.87	26,012.26
01/04/2010	30/04/2010	24,537.58	24,537.58	31.52	31.52	24,506.06
01/05/2010	31/05/2010	28,583.31	28,583.31	29.97	29.97	28,553.34
01/06/2010	30/06/2010	13,373.82	13,373.82	85.32	85.32	13,288.50
01/07/2010	31/07/2010	9,560.11	9,560.11	77.32	77.32	9,482.79
01/08/2010	31/08/2010	9,236.59	9,236.59	63.39	63.39	9,173.20
01/09/2010	30/09/2010	10,316.06	10,316.06	85.59	85.59	10,230.47
01/10/2010	31/10/2010	16,503.87	16,503.87	59.66	59.66	16,444.21
01/11/2010	30/11/2010	29,078.79	29,078.79	24.72	24.72	29,054.07
01/12/2010	31/12/2010	23,845.28	23,845.28	41.09	41.09	23,804.19
01/01/2011	31/01/2011	23,704.19	23,704.19	137.64	137.64	23,566.55
01/02/2011	28/02/2011	16,295.58	16,295.58	154.47	154.47	16,141.11

Table 6 Net electricity supplied to the grid by the Project (MWh)

Period		E _{project}	E _{others}	EG _{total}	EG _y
From	To	E	J	O	P=O*E/(E+J)
23/12/2009	31/12/2009	2,931.36	0.00	2,827.56	2,827.56
01/01/2010	31/01/2010	17,265.19	10,222.45	26,741.56	16,796.57
01/02/2010	28/02/2010	7,188.42	10,533.27	17,122.51	6,945.38
01/03/2010	31/03/2010	14,599.06	12,161.44	26,012.26	14,190.86
01/04/2010	30/04/2010	11,199.46	13,845.05	24,506.06	10,958.67
01/05/2010	31/05/2010	13,695.10	15,629.42	28,553.34	13,334.94
01/06/2010	30/06/2010	5,261.44	8,464.18	13,288.50	5,093.88
01/07/2010	31/07/2010	4,308.46	5,438.28	9,482.79	4,191.78
01/08/2010	31/08/2010	4,736.09	4,697.86	9,173.20	4,605.19
01/09/2010	30/09/2010	5,582.87	4,930.60	10,230.47	5,432.59
01/10/2010	31/10/2010	9,180.41	7,739.98	16,444.21	8,922.05
01/11/2010	30/11/2010	15,401.40	14,167.40	29,054.07	15,133.29
01/12/2010	31/12/2010	10,371.90	13,968.79	23,804.19	10,143.29
01/01/2011	31/01/2011	12,074.86	12,140.30	23,566.55	11,751.43
01/02/2011	28/02/2011	7,052.06	9,602.20	16,141.11	6,834.77
Total		/	/	/	137,162.27

The net electricity supplied to the grid is 137,162.27MWh.

The baseline emissions of the Project are calculated as:

$$BE_y = EF_{\text{grid,CM,y}} * EG_y = 1.0548 \text{ tCO}_2\text{e/MWh} \times 137,162.27 \text{ MWh} = 144,678 \text{ tCO}_2\text{e}$$

[Project Emissions]

The Project is a new wind project, according to the methodology, the project emission is zero.

[Leakage Emissions]

No leakage needs to be considered according to ACM0002 version 07.

[Emission Reductions]

Therefore, the emission reductions during the monitoring period are calculated as:

$$ER_y = BE_y - PE_y - LE_y = 144,678 \text{ tCO}_2\text{e} - 0 - 0 = 144,678 \text{ tCO}_2\text{e}$$

The annual estimated emission reductions are 130,755 tCO₂e as per the accepted revised PDD. The monitoring period from 23/12/2009 to 28/02/2011 is 433 days, the corresponding estimated emission reductions are 155,115 tCO₂e (=130,755* 433/365) and the actual emission reductions are 144,678 tCO₂e, which are less than the estimated value due to the variable wind resource. Therefore, the emission reductions are reasonable.

Bureau Veritas Certification hereby also confirms that the calculation of the emission reductions has been verified to be correct and conservative.

☞ Corresponding to the paragraph 209 of VVM version 01.2, Bureau Veritas Certification can confirm that:

- The data used for the determination of the emission reductions are available and monitored in accordance with the monitoring plan.
- The data used in anthropogenic emission reductions' calculation of this monitoring period have been verified and found consistent with those described in the accepted revised PDD.



- The appropriate methods and formulae for calculating baseline emissions, project emissions and leakages has been properly followed the methodology and accepted revised PDD;
- The assumptions, emission factors and default values that were applied in the monitoring report and the calculations have been justified.



4 VERIFICATION OPINION

Bureau Veritas Certification has performed the 1st periodic verification of CGN Inner Mongolia Zhurihe Phase I Wind Farm Project, CDM Registration Reference Number 1577, owned by CGN Wind Power Co., Ltd.; and applying the methodology ACM0002 version 07. The verification was performed based on the requirements set by the CDM and relevant guidance provided by CMP and the CDM Executive Board.

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

The management of CGN Wind Power Co., Ltd. is responsible for the preparation of the GHG emissions data and the reported GHG emission reductions of the Project on the basis set out within the project Monitoring Plan in the accepted revised PDD. The development and maintenance of records and reporting procedures in accordance with that plan, including the calculation and determination of GHG emission reductions from the Project, is the responsibility of the management of the Project.

Bureau Veritas Certification has verified the project Monitoring Report version 2.0 dated 13/08/2012 for the reporting period as indicated below. Bureau Veritas Certification confirms that the Project is implemented as described in validated and accepted revised project design documents. Installed equipments being essential for generating emission reductions run reliably and are calibrated appropriately. The monitoring system is in place and the Project is generating GHG emission reductions as a CDM project.

Bureau Veritas Certification can confirm that the GHG emission reductions are calculated without material misstatements. Our opinion relates to the projects' GHG emissions and resulting GHG emission reductions reported and related to the validated and accepted revised project baseline, monitoring plan and its associated documents. Based on the evidence and information that are considered necessary to guarantee that GHG emission reductions are appropriately calculated, Bureau Veritas Certification confirms the following statement

Reporting period:	23/12/2009	to 28/02/2011
Baseline emissions:	144,678	tCO ₂ equivalents
Project emissions:	0	tCO ₂ equivalents
Leakage emissions	0	tCO ₂ equivalents
Emission Reductions:	144,678	tCO ₂ equivalents

Mr. Tim Wang Wei
Internal Technical Reviewer
19/09/2012

Mr. Liao Ling
Team Leader
19/09/2012



5 REFERENCES

Documents:

- Ref-1 Registered PDD version 1.4 dated 18/11/2009
- Ref-2 Accepted revised PDD version 1.5 dated 12/03/2012
- Ref-3 Validation Report version 02 dated 07/12/2009
- Ref-4 Validation Opinion on the revised PDD
- Ref-5 Monitoring Report version 1.0 dated 02/04/2011
- Ref-6 Monitoring Report version 2.0 dated 13/08/2012
- Ref-7 ACM0002 version 07 "Consolidated Baseline and Monitoring Methodology for Grid-Connected Electricity generation from Renewable Sources"
- Ref-8 Validation and Verification Manual Version 01.2 dated 30/07/2010
- Ref-9 Guidelines on completeness check of requests for issuance (EB48 Annex68)
- Ref-10 Diagram of power grid connection system
- Ref-11 Power Purchase Agreement signed with the grid company
- Ref-12 Commissioning report of the Project
- Ref-13 Commission report of CGN Inner Mongolia Zhurihe Phase II Wind Farm Project (UNFCCC Ref. 3453)
- Ref-14 Daily/Monthly Reading Records of the meters
- Ref-15 Electricity Transaction Notes (ETNs) issued by the grid company
- Ref-16 Daily Operation Record of the Project
- Ref-17 Calibration certificates of meters issued by Electric Measurement Inspect Centre of Inner Mongolia Electric Science Research Institute
- Ref-18 Certificates of authorization for Electric Measurement Inspect Centre of Inner Mongolia Electric Science Research Institute (Code: (Meng) Fa Ji (2009) No. 15021) with valid period 02/01/2009 to 01/01/2014
- Ref-19 Certificate of authorization for Electricity Measuring Centre of Xilinguole Electricity Power Bureau (Code: (Meng) Fa Ji (2009) No. 15032) with valid period from 02/01/2009 to 01/01/2014
- Ref-20 Monitoring Report 1st monitoring period of project 3453 (CGN Inner Mongolia Zhurihe Phase II Wind Farm Project), version 2.0 dated 15/01/2012
- Ref-21 Verification Report of the 1st monitoring period of project 3453 (CGN Inner Mongolia Zhurihe Phase II Wind Farm Project), version 01 dated 22/02/2012
- Ref-22 Monitoring & Management Manual
- Ref-23 Monitoring Training records
- Ref-24 Technical Administrative Code of Electric Energy Metering (DL/T 448-2000)
- Ref-25 National standard: Electricity Meter Calibration Regulation (JJG596-1999)
- Ref-26 Emission Reduction Calculation Spreadsheet

Persons interviewed:

List persons interviewed during the verification or persons that contributed with other information that are not included in the documents listed above.

CGN Wind Power Co., Ltd.

Ms. Li Meng	Project Manager
Ms. Li Binghua	Project manager
Mr. Liu Tao	Manager of the power plant
Carbon Resource Management Ltd.	
Mr. Ding Lin'en	Project Manager



6 CURRICULA VITAE OF THE DOE'S VERIFICATION TEAM MEMBERS

Mr. Liao Ling	Bureau Veritas Certification, China	Team Leader, Climate Change Lead Verifier. He holds a Bachelor Degree in Atmosphere Science. Before joining BV in 2008, he gained 2 years of technical working experience of CDM in P.R China. He obtained the certificate of CDM Verifier and Lead Auditor for EMS ISO 14001. He has completed the course assessment for the ISO 14064:2006.
Mr. Tim Wang Wei	Bureau Veritas Certification, China	Internal Technical Reviewer, Climate Change Lead Verifier He holds a Master Degree in Environmental Science. Before joining BV in Feb.2009, he gained 4 and a half years of working experience in engineering and EIA for manufacturing enterprise in P.R.China. He obtained the certificates of CDM Verifier and ISO14001 Lead Auditor and received training in ISO 14064 in Bureau Veritas.

Appendix A: COMPANY CDM PROJECT VERIFICATION PROTOCOL

Table 1 Verification requirements based on the CDM Validation and Verification Manual (Version 01.2, EB55 Annex 01)

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
1. Compliance of the monitoring report with the guidelines for completing the monitoring report form					
A.1. Brief description of the project activity					
a. Is the description of the project activity to be presented in this section a brief summary of the detailed description given in the section .B.1 Implementation status of the project activity?	EB 54	Ann 34	The Project started construction on 01/05/2008. It started commissioning on 04/03/2009. The Project was operated normally during this monitoring period, no special events occur. CAR 1 Since the actual implementation of the Project is different from the description in the PDD, a request for approval of changes should be submitted to CDM-EB. The actual total installed capacity of the Project has been changed to 50MW from the 49.5MW as described in the registered PDD; it has been validated that the changed did not impact the scale of the Project, the applicability of the methodology and the additionality of the Project. The notification of changes from the project activity as described in the registered PDD has been submitted and accepted on 19/06/2012. Therefore, CAR 1 is closed.	CAR-1	OK
b. Does this description include:	EB 54	Ann 34			

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. Purpose of the project activity and the measures taken to reduce greenhouse gas emissions?	EB 54	Ann 34	Yes.	OK	OK
ii. Brief description of the installed technology and equipments?	EB 54	Ann 34	Yes.	OK	OK
iii. Relevant dates for the project activity (e.g. construction, commissioning, continued operation periods, etc.)?	EB 54	Ann 34	Yes.	OK	OK
iv. Total emission reductions achieved in this monitoring period?	EB 54	Ann 34	Yes.	OK	OK
A.2. Project Participants					
c. Are the project participants listed?	EB 54	Ann 34	Yes. The project participant from Host Party is CGN Wind Power Co., Ltd. (China) The project participant from Annex I Parties are: Carbon Resource Management Ltd. (United Kingdom of Great Britain and Northern Ireland) Carbon Resource Management S.A. (Switzerland)	OK	OK
A.3. Location of the project activity					
d. Is complete information of the location of the project activity: town, city, country and GPS coordinates provided?	EB 54	Ann 34	Yes. The Project locates in Zhurihe Town, Xilinguole City, Inner Mongolia Autonomous Region, P.R. China; the	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			GPS coordinates are 112°46'30"E, 42°27'40"N; that are consistent with the location in the PDD and has been confirmed by onsite visit.		
A.4. Technical description of the project					
e. Is a description of the technology applied in the project activity and detailed technical process, including diagrams provided?	EB 54	Ann 34	Yes.	OK	OK
A.5. Title, reference and version of the baseline and monitoring methodology applied to the project activity					
f. Are the complete reference of the methodology applied and tools whenever is applicable included?	EB 54	Ann 34	Yes, the methodology ACM0002 version 07 "Consolidated Baseline and Monitoring Methodology for Grid-Connected Electricity generation from Renewable Sources" was used. The tools, "Tool for the demonstration and assessment of additionality" version 05.2 and "Tool to calculate the emission factor for an electricity system" version 01.1, 29 July 2008 were also listed in the MR consistent with the accepted revised PDD.	OK	OK
A.6. Registration date of the project activity					
g. Is the registration date of the project activity provided?	EB 54	Ann 34	Yes, the Project was registered on 23/12/2009.	OK	OK
A.7. Crediting period of the project activity and related information (start date and choice of crediting period)					

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
h. Are the crediting period of the project activity and related information (start date and choice of crediting period) provided?	EB 54	Ann 34	Yes.	OK	OK
i. Does the description also include changes to the start date of the crediting period post-registration that have been accepted by the Board, when applicable?	EB 54	Ann 34	Yes. The starting date of the crediting period was 23/12/2009, the Project has chosen a renewable crediting period in the PDD. No change to the start date of the crediting period.	OK	OK
A.8. Name of responsible person(s)/ entity(ies)					
j. Is the contact information of the person(s)/entity(ies) responsible for completing the monitoring report form (CDM-MR) provided?	EB 54	Ann 34	Yes.	OK	OK
B.1. Implementation status of the project activity					
k. Does this section include a description of the implementation and operational status of the project as of this monitoring period in accordance with the latest version of the CDM Validation and Verification Manual (CDM-VVM)?	EB 54	Ann 34	Yes.	OK	OK
l. Does the description include inter alia:	EB 54	Ann 34			
i. The starting date of operation of the project activity? For project activities	EB 54	Ann 34	Yes, The Project was commissioned on 04/03/2009.	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
that consist of more than one site, the report shall clearly describe the status of implementation and starting date of operation for each site. For CDM project activities with phased implementation, the report shall indicate the progress of the proposed CDM project activity achieved in each phase.					
ii. The information regarding the actual operation of the project activity during this monitoring period, including information on special events, for example overhaul times, downtimes of equipment, exchange of equipment, etc?	EB 54	Ann 34	Yes. The Project ran normal during this monitoring period, which has been specified in the MR and has been verified by the operation logs.	OK	OK
iii. A brief description of: (i) events or situations that occurred during the monitoring period, which may impact the applicability of the methodology, and (ii) how the issues resulting from these events or situations are being addressed?	EB 54	Ann 34	Not applicable, the Project run normal during this monitoring period.	OK	OK
B.2. Revision of the monitoring plan					
m. Is it indicated if the monitoring plan has been revised?	EB 54	Ann 34	No revision on the monitoring plan was requested.	OK	OK

VERIFICATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
n. Is the date of approval, if revised, included?	EB 54	Ann 34	N/A	OK	OK
B.3. Request for deviation applied to this monitoring period					
o. Is any deviation applied to this monitoring period indicated?	EB 54	Ann 34	No deviation applied during this monitoring period.	OK	OK
p. Is the reference number, if any deviation applied, included?	EB 54	Ann 34	N.A.	OK	OK
B.4. Notification or request of approval of changes					
q. Is any notification or request of approval of changes from the project activity as described in the registered CDM-PDD indicated?	EB 54	Ann 34	Pending on CAR 1 A notification of changes from the project activity in the registered PD has been submitted and accepted by the Board on 19/06/2012.	Pending	OK
r. Is the date of approval, if applicable, included?	EB 54	Ann 34	N.A.	OK	OK
C. Description of the monitoring system					
s. Is a description of the monitoring system provided?	EB 54	Ann 34	Yes.	OK	OK
t. Does this section include data collection procedures (information flow including data generation, aggregation, recording, calculation and reporting), organizational structure, roles and responsibilities of	EB 54	Ann 34	Yes The Project shares the same transformer, substation and main transmission line to the grid with another wind farm (CGN Inner Mongolia Zhurihe Phase II Wind Farm	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
personnel, and emergency procedures for the monitoring system?			Project, UNFCCC Ref. 3453, hereafter referred to as "project 3453"). The electricity generated by the Project is transmitted to the transformer at the on-site substation via four transmission lines, after merging the electricity generated by the project 3453 at the transformer, the electricity is exported to the North China Power Grid (NCPG). There is an electricity meter installed at each transmission line that connected the Project to the transformer to monitor the electricity export to the transformer by the Project (meter M1 to M4 respectively); and four electricity meters to monitor the electricity export to the transformer by the project 3453 (meter M5 to M8). Besides these eight meters, there are two meters (one as main meter and the other as backup) installed at the on-site substation to monitor the electricity exported to and imported from the grid by both the two projects. As per accepted revised PDD the PP records the readings every day and record the reading of the meters monthly together with the grid company, the grid company issues the sales receipts (Electricity Transaction Notes, ETNs) to confirm the electricity supplied to the grid accordingly. The Monthly Reading Records (MRRs) of the meters are therefore used for calculating Emission Reductions. The PP has the responsibility of overall monitoring, which has established a monitoring team for monitoring of power generation, the maintenance and operation of the Project as well as associated metering systems and		

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			auxiliaries. All the records related to generation, maintenance have been satisfactorily maintained. Responsibilities have been allocated to the well-trained monitoring staffs as per monitoring plan contained in the accepted revised PDD. The QA / QC procedures are part of management system and are documented in management procedures. The records and all relevant paper based information are collected and archived by the operation department for internal audit. The responsibilities and the procedures are included in the Monitoring and Management Manual and have been verified.		
u. Does this include line diagrams showing all relevant monitoring points?	EB 54	Ann 34	Yes.	OK	OK
D. Data and parameters					
v. Does this section include parameters used to calculate baseline, project, and leakage emissions as well as other relevant parameters required by the approved methodology and the monitoring plan; and specific information on how data and parameters have been monitored during the monitoring period?	EB 54	Ann 34	Yes. Please refer to the section 4.c below for detail.	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
w. Are data that is determined only once for the crediting period but are used after registration of the project activity included here under section D.1?	EB 54	Ann 34	Yes. The baseline emission factor has been determined ex ante in the registered PDD as 1.0548tCO ₂ e/MWh and correctly applied.	OK	OK
x. For each parameter the following information, using the tables provided, is provided:	EB 54	Ann 34			
i. Value of monitored parameter in the period for the purpose of calculating emission reductions? To report multiple values, a table may be used and included in this monitoring report or include references to spreadsheet. For default value (such as an IPCC value), where it is ex-post confirmed, the most recent value shall be applied.	EB 54	Ann 34	Yes. Values of monitored parameters in this monitoring period were specified in the MR and spreadsheet.	OK	OK
ii. Description of the equipment used to monitor each parameter, including details on accuracy class, and calibration information (frequency, date of calibration and validity), if applicable as per monitoring plan?	EB 54	Ann 34	Yes.	OK	OK
iii. Measuring and recording method: how the parameters are measured/calculated, specifying the measurement and recording frequency?	EB 54	Ann 34	Yes.	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
iv. Source of data: logbooks, daily records, surveys, etc?	EB 54	Ann 34	Yes.	OK	OK
v. Where relevant, the calculation method of the parameter?	EB 54	Ann 34	Yes.	OK	OK
vi. The QA/QC procedures applied (if applicable per monitoring plan)?	EB 54	Ann 34	Yes.	OK	OK
vii. Include information about appropriate emission factors, IPCC default values and any other reference values that have been used in the calculation of emission reductions?	EB 54	Ann 34	Yes.	OK	OK
E.1. Baseline emissions calculation					
y. Does this section include all formulae used and description to calculate the baseline emissions applying actual values?	EB 54	Ann 34	Yes.	OK	OK
z. Was a table used and included in this monitoring report or include references to spreadsheet?	EB 54	Ann 34	Yes.	OK	OK
E.2. Project emissions calculation					
aa. Does this section include all formulae used and description to calculate the project emissions applying actual values?	EB 54	Ann 34	According to the applied methodology, the project emissions were zero in this monitoring period.	OK	OK

VERIFICATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
bb. Was a table used and included in this monitoring report or include references to spreadsheet?	EB 54	Ann 34	N.A.	OK	OK
E.3. Leakage calculation					
cc. Does this section include all formulae used and description to calculate the leakage applying actual values?	EB 54	Ann 34	As per ACM0002 version 07, the leakage is zero.	OK	OK
dd. Was a table used and included in this monitoring report or include references to spreadsheet?	EB 54	Ann 34	N.A.	OK	OK
E.4. Emission reductions calculation / table					
ee. Does this section include the formulae used to calculate the emission reductions and the total of the emission reductions achieved during the monitoring period?	EB 54	Ann 34			
i. Total baseline emissions:	EB 54	Ann 34	Yes.	OK	OK
ii. Total project emissions:	EB 54	Ann 34	Yes.	OK	OK
iii. Total leakage:	EB 54	Ann 34	Yes.	OK	OK
iv. Total emission reductions:	EB 54	Ann 34	Yes.	OK	OK
E.5. Comparison of actual emission reductions with estimates in the CDM-PDD					

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ff. Does this section include a comparison of actual values of the emission reductions achieved during the monitoring period with the estimations in the registered CDM-PDD?	EB 54	Ann 34	Yes.	OK	OK
E.6. Remarks on difference from estimated value in the PDD					
gg. Is an explanation of the cause of any increase in the actual emission reductions achieved during the current monitoring period (e.g. higher water availability, higher load plant factor, etc), including all information (i.e. data and/or parameters) that is different from that stated in the registered CDM-PDD provided?	EB 54	Ann 34	No emission reductions increase in this monitoring period compared to the estimation in the registered PDD.	OK	OK
2. Project implementation in accordance with the registered project design document					
a. Are all physical features of the proposed CDM project activity proposed in the registered PDD in place?	VVM	196	25 sets of Wind Turbine Generator with unit capacity of 2000kW have been installed and in generation during the monitoring period, the total installed capacity is 50MW, which is different from the PDD. Pending on CAR 1 The revised PDD has been accepted by the UNFCCC on 19/06/2012, the project has implemented in accordance with the accepted revised PDD.	Pending	OK

VERIFICATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
b. Have the project participants operated the proposed CDM project activity as per the registered PDD?	VVM	196	Yes. The Project is operated by CGN Wind Power Co., Ltd. (hereinafter referred as the "PP"). The PP has operated the CDM Project activity as per the registered PDD. The electricity generated by the Project is supplied to North China Power Grid (hereinafter referred as "NCPG") through the on-site substation.	OK	OK
c. Was an on-site visit conducted?	VVM	196	Yes. The on-site visit of 1st periodic verification has been conducted on 05/05/2011. The audit purpose and methodology was briefed in the opening meeting participated by the following persons. Bureau Veritas Certification Mr. Liao Ling Team Leader CGN Wind Power Co., Ltd. Ms. Li Meng Project Manager Mr. Liu Tao Manager of the power plant Ms. Li Binghua CDM Project Manager Carbon Resource Management S.A. (consultant) Mr. Ding Lin'en Project Manager	OK	OK
d. If not, justify the rationale of the decision.	VVM	196	N.A.	OK	OK
e. Is it identified that the implementation or operation of CDM project activity conform with the description contained in the	VVM	197	The operation of the Project conforms to the description in the registered PDD.	Pending	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
registered PDD, are following conducted?			The implementation of the CDM project activity is different from the description in the registered PDD. Pending on CAR 1. The revised PDD has been accepted by the UNFCCC on 19/06/2012, the project has implemented in accordance with the accepted revised PDD.		
f. If not, which are the potential impacts due to these changes according to the relevant guidelines established by the Executive Board (EB48-§73)?	VVM	197	Pending on CAR 1 The actual installed capacity of the Project is 50MW, consist 25 units of 2MW wind turbine; the planned installed capacity was 49.5MW with 33 units of 1.5MW wind turbines. The actual effective output capacity increased compared with the description in the registered PDD, which may impact the output of electricity and the emission reductions. The revised PDD has been accepted by the UNFCCC on 19/06/2012, the project has implemented in accordance with the accepted revised PDD.	Pending	OK
g. Was any change identified close to the boundary of the project activity but outside it?	VVM	197	N/A	OK	OK
h. If yes, which are the potential impacts due to these changes?	VVM	197	N/A	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
i. Was a notification or a request for approval of changes been submitted from the project activity as described in the registered PDD submitted prior to the conclusion of the verification/ certification for the corresponding?	VVM	197	Pending on CAR 1 The revised PDD has been accepted by the UNFCCC on 19/06/2012, the project has implemented in accordance with the accepted revised PDD.	Pending	OK
3. Compliance of the monitoring plan with the monitoring methodology					
a. Is the validated monitoring plan in accordance with the approved methodology applied by the proposed CDM project activity?	VVM	200	Yes. The monitoring plan in accordance with the approved methodology ACM0002 version 07 has been applied by the CDM project activity. The monitoring team has been set up and functions. All monitoring staffs have been trained. The monitoring procedures are in place and function. All parameters indicated in the MP have been measured and recorded in the respective documents both in paper form and electronic form. The QA/QC procedures are in place and function. All meters have been calibrated as per the description in MP.	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
b. If no, was a request for revision of the monitoring plan was done? (The DOE may request for revision of the monitoring plan covering the monitoring period under verification, for approval by CDM Executive Board)	VVM	201	NA	OK	OK
c. Are there any monitoring aspects of the project activity that are not specified in the methodology, particularly in the case of small-scale methodologies (e.g. additional monitoring parameters, monitoring frequency and calibration frequency)?	VVM	202	No	OK	OK
4. Compliance of monitoring with the monitoring plan					
a. Have all issues identified in the validation report to be verified during verification been resolved by the project participant and are there any open issues identified in the previous verification?	VVM	190	This is the 1st periodic verification, there is no issues identified in the validation left to be verified during this periodic verification.	OK	OK
b. Have the monitoring plan and the applied methodology been properly implemented and followed by the project participants?	VVM	205	Yes. The MP and the methodology ACM0002 version 07 have been followed by the PP.	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			The Project shared the main meter installed at the substation with project 3453 during this monitoring period; the main meter is jointly monitored by the PP and the grid company. Besides the main meter, there are four electricity meters (meter M1 to M4) installed at the project site for monitoring the electricity exported to the grid by the Project, and four other electricity meters (meter M5 to M8) for the other wind project; these eight meters were monitored by the PP and confirmed by the grid company. It is fully consistent with the monitoring plan contained in the accepted revised PDD. The electricity is continuously monitored and monthly recorded; the cut off time is 24:00 on the last day of every month. The grid company and the PP recorded and confirmed the readings on 23/12/2009 on which the Project was registered, and the grid company issued a special ETN for that month.		
c. Have all parameters stated in the monitoring plan, the applied methodology and relevant CDM Executive Board decisions been sufficiently monitored and updated as applicable, including:	VVM	205			
i. Project emission parameters?	VVM	205	Yes. According to the ACM0002 version 07, the Project is a zero-emission activity and the project emission need not be considered.	OK	OK

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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. Baseline emission parameters?	VVM	205	Yes. There are two meters (one as the main and the other as backup) installed at the substation which can measure the bi-directional electricity flows including both exported to and imported from the grid. The net electricity supplied to the grid by the Project (EG_y) is used for baseline emission calculation, this parameter can be calculated by using the provision given by the registered monitoring plan: TEG_y - the electricity supplied to NCPG monitored by the main meter, which is supplied by the Project and the project 3453. CEG_y - the electricity imported from NCPG monitored by the main meter, which is imported by the Project and the project 3453. Since the Project shares the main meter with other project, the net electricity supplied by the Project was determined by the share of supplied electricity: $EG_y = EG_{\text{project}} = EG_{\text{total}} * E_{\text{project}} / (E_{\text{project}} + E_{\text{others}})$ Where: EG_y (EG_{project}) is the net electricity supplied to the grid by the Project; EG_{total} is the total net electricity supplied to the grid monitored by the main meter which is supplied by both the Project and the project 3453;	OK	OK

VERIFICATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			E_{project} is the electricity generation from the project activity monitored by the meter M1 to M4; E_{others} is the electricity generation from project 3453 monitored by the meter M5 to M8. The total net electricity (EG_{total}) is calculated by the exported electricity (TEG_y) minus the imported electricity (CEG_y): $EG_{\text{total}} = TEG_y - CEG_y$ The baseline emissions are calculated as follow: $BE_y = EG_y \times EF_{\text{grid,CM,y}}$		
iii. Leakage parameters?	VVM	205	According to the ACM0002 version 07, the Project is a zero-emission activity and the leakage need not be considered.	OK	OK
iv. Management and operational system: the responsibilities and authorities for monitoring and reporting are in accordance with the responsibilities and authorities stated in the monitoring plan?	VVM	205	Yes. The PP has the responsibility of overall monitoring, which has established a monitoring team for monitoring of power generation, the maintenance and operation of the Project as well as associated metering systems. All the records related to generation, maintenance have been satisfactorily maintained. Responsibilities have been allocated to the well-trained monitoring staffs as per monitoring plan. The QA / QC procedures are part of management system and are documented in management procedures.	OK	OK

VERIFICATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			The records and all relevant paper based information are collected and archived by the operation department for internal audit. The responsibilities and the procedures are included in the Monitoring and Management Manual and have been verified.		
d. Is the accuracy of equipment used for monitoring is in accordance with the relevant guidance provided by the CDM Executive Board and are equipment controlled and is calibrated in accordance with the monitoring plan?	VVM	205	The main meter and backup meter installed at the substation were calibrated by Electric Measurement Inspect Centre of Inner Mongolia Electric Science Research Institute, and the meter M1 to M8 were calibrated by Electric Measurement Centre of Xilinguole Power Company on periodic basis. The calibration certificates of 2009, 2010 and 2011 covered the monitoring period have been provided and found in found substantial. The accuracy and the calibrations of meters are in line with the monitoring plan and the relevant national industrial standard. CL 1 — The calibration of meters should be clearly described in the MR. The calibration of electricity meters have been specified in the monitoring report and consistent with the provided evidences; hence CL 1 is closed.	CL 1	OK
i. Are monitoring results consistently recorded as per approved frequency?	VVM	205	By checking the ETNs and the reading records of the meters, Bureau Veritas Certification can confirm that the electricity exchanged between the Project and the grid have been correctly monitored as per signed Power Purchase Agreement and the monitoring plan.	OK	OK

VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. Have quality assurance and quality control procedures been applied in accordance with the monitoring plan?	VVM	205	Yes. The QA/QC procedures have been documented in the Monitoring and Management Manual and applied in accordance with the MP.	OK	OK
iii. Has the calibration of those measuring equipments that have an impact on the claimed emission reductions been conducted by the project participants at a frequency specified in the applied monitoring methodology and/or the monitoring plan?	VVS	237	Bureau Veritas Certification has checked the calibration certificates of the meters and can confirm that all the meters have been calibrated at the frequency as per the monitoring plan.	OK	OK
5. Assessment of data and calculation of greenhouse gas emission reductions					
a. Is a complete set of data for the specified monitoring period is available? (If no, i.e., only partial data are available because activity levels or non-activity parameters have not been monitored in accordance with the registered monitoring plan, the DOE shall opt to either make the most conservative assumption theoretically possible in finalizing the verification report, or raise a request for deviation prior to submitting request for issuance if	VVM	208	A complete set of data include records of the installed meters from Dec. 2009 to Feb. 2011 which can cover the monitoring period have been provided to the verification team. CAR 2 The period in the table "The detailed calculation of EG_y" in page 7 of MR version 1.0 is incorrect; the electricity generation monitored by meter #5 and #6 in period 01/01/2010 to 28/02/2010 is inconsistent with the evidences. The period and values have been corrected and consistent with the evidences; hence CAR 2 closed.	CAR 2	OK

VERIFICATION REPORT



CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
appropriate).					
b. Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis?	VVM	208	The information provided in the MR version 1.0 has been crosschecked with meters records and ETNs. Pending on CAP-2 The information in the final version of monitoring report has been cross checked with the provided evidences and found consistent.	Pending	OK
c. Have calculations of baseline emissions, proposed CDM project activity emissions and leakage, as appropriate, been carried out in accordance with the formulae and methods described in the monitoring plan and the applied methodology document?	VVM	208	As wind power project is a zero emission activity the actual emission reductions are being determined using the formulae as given in the Section B.6.3 of the PDD. $ER_y = BE_y - PE_y - LE_y = EG_y * EF_{grid,CM,y}$	OK	OK
d. Have any assumptions used in emission calculations been justified?	VVM	208	No assumption used in emission calculations.	OK	OK
e. Have appropriate emission factors, IPCC default values and other reference values been correctly applied?	VVM	208	Yes. The Emission Factor of the baseline electricity grid has been calculated ex-ante and will not be updated during the first crediting period; the value is 1.0548tCO₂e/MWh. The value has been validated and confirmed in the validation stage.	OK	OK

VERIFICATION REPORT

Table 2 Resolution of Corrective Action/Clarification/ Forward Action Requests

Draft report clarifications and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project owner response	Verification team conclusion
CAR 1 Since the actual implementation of the Project is different from the description in the PDD, a request for approval of changes should be submitted to CDM EB.	1.a	The actual total installed capacity of the Project has been changed to 50MW from the 49.5MW as described in the registered PDD; it has been validated that the changed did not impact the scale of the Project, the applicability of the methodology and the additionality of the Project. The notification of changes from the project activity as described in the registered PDD has been submitted and accepted on 19/06/2012.	The notification of changes from the project activity as described in the registered PDD has been submitted and accepted on 19/06/2012. Therefore, CAR 1 is closed.
CAR 2 The period in the table "The detailed calculation of EGy" in page 7 of MR version 1.0 is incorrect; the electricity generation monitored by meter #5 and #6 in period 01/01/2010 to 28/02/2010 is inconsistent with the evidences.	5.a	The period and values have been corrected.	The period and values have been corrected and consistent with the evidences; hence CAR 2 closed.

VERIFICATION REPORT

Draft report clarifications and corrective action requests by verification team	Ref. to checklist question in table 1	Summary of project owner response	Verification team conclusion
CL 1 The calibration of meters should be clearly described in the MR.	4.d	The calibration of electricity meters have been specified in the monitoring report.	The calibration of electricity meters have been specified in the monitoring report and consistent with the provided evidences; hence CL 1 is closed.