VERIFICATION REPORT
BEIJING GUOTOU ENERGY CONSERVATION COMPANY (BJGT)

VERIFICATION OF THE ZHANGBEI MANJING WINDFARM PROJECT

REPORT NO.BVC/CHINA-VR/8530/2012
REVISION NO.01

BUREAU VERITAS CERTIFICATION

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VERIFICATION REPORT

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21/06/2012	Bureau Veritas Certification Holding SAS
Client:	Client ref.:
Beijing Guotou Energy Conservation Company (BJGT)	Mr. YAO Xi

Summary:

Bureau Veritas Certification has conducted the 7th periodic verification of Zhangbei Manjing Windfarm Project, CDM Registration Reference Number 0233, owned by Beijing Guotou Energy Conservation Company (BJGT), which is located in Zhangbei County, Zhangjiakou City, Hebei Province, P. R. China, and applying the methodology AM0005 Version 01, 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 onsite 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 validated and registered 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 69,012 tons of CO_2e 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, approved revised monitoring plan and its associated documents.

Reporting period:	01/03/2011 to 29/02/2012
Baseline emissions:	69,012 t CO_2 equivalents.
Project emissions:	0 t CO_2 equivalents.
Leakage emissions:	0 t CO_2 equivalents.
Emission Reductions:	69,012 t CO_2 equivalents.

Report No.:	Subject Group:
BVC-China/VR8530/2012	CDM
Project title:	
Zhangbei Manjing Windfarm Project	
Work carried out by:	
Ms. Coco Geng Yan - Team Leader	
Internal Technical Review carried out by:	
Mr. Liao Ling	

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Work approved by:
Flavio Gomes



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Abbreviations

CAR	Corrective Action Request
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CL	Clarification Request
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
ETNs	Electricity Transaction Notes
FAR	Forward Action Request
GHG	Green House Gas(es)
MP	Monitoring Plan
MR	Monitoring Report
MRR	Monthly Reading Record
NCPG	North China Power Grid
PDD	Project Design Document
PP	Project Participant
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention on Climate Change
VVM	Validation and Verification Manual

Table of Contents *Page*

1. INTRODUCTION 5
1.1. Objective 5
1.2. Scope 5
1.3. GHG Project Description 5
1.4. Verification Team and Internal Technical Reviewer 6

2. METHODOLOGY 6
2.1. Review of Documents 7
2.2. Follow-up Interviews 7
2.3. Resolution of Clarification, Corrective and Forward Action Requests 8
2.4. Internal Technical Review 9

3. VERIFICATION CONCLUSIONS 9
3.1. Remaining issues from previous validation/verification (190) 10
3.2. Project implementation in accordance with the registered project design document (198) 10
3.3. Compliance of the monitoring plan with the monitoring methodology (203) 11
3.4. Compliance of monitoring with the monitoring plan (206) 11
3.5. Assessment of data and calculation of greenhouse gas emission reductions (209) 13

4. VERIFICATION OPINION 17

5. REFERENCES 18

6. CURRICULA VITAE OF THE DOE'S VERIFICATION TEAM MEMBERS 19

APPENDIX A: CDM PROJECT VERIFICATION PROTOCOL 20

1. INTRODUCTION

Beijing Guotou Energy Conservation Company (BJGT) (the project owner, hereafter called "**the PP**") has commissioned Bureau Veritas Certification to verify the emission reductions of its CDM project Zhangbei Manjing Windfarm Project (hereafter called "**the Project**") at Zhangbei County, Zhangjiakou City, Hebei Province, 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. Objectives

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 approved 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 consists of 30 sets of 1500 kW wind turbine unit. The total installed capacity of the Project activity is 45 MW. The electricity is exported to North China Power Grid (NCPG). The

annual expected electricity supplied to NCPG is 108GWh and the annual estimated emission reductions are 97,848tCO_2e.

The Project has been registered on 23/03/2006 (UNFCCC ref. No. 0233) under approved CDM methodology AM0005 Version 01 "Small grid-connected zero-emissions renewable electricity generation". The Project has chosen the renewable period in the registered PDD, the first renewable crediting period is from 01/01/2006 to 31/12/2012.

A request for revision of the monitoring plan had been sought and approved by EB on 19/10/2007. /7/

Project title:	Zhangbei Manjing Windfarm Project
UNFCCC ref number:	0233
Registration Date:	23/03/2006
Crediting Period:	01/01/2006 to 31/12/2012
Monitoring Period:	01/03/2011 to 29/02/2012
Project Participants:	(China): Beijing Guotou Energy Conservation Company (BJGT) (United Kingdom of Great Britain and Northern Ireland): First Carbon Fund Ltd (Switzerland): Vitol S.A.
Methodologies used	AM0005 Version 01
Location of the Project:	Zhangbei County, Zhangjiakou City, Hebei Province, P. R. China
Geo coordinates:	114°32' E, 42°08' N1
UNFCCC link:	http://cdm.unfccc.int/Projects/DB/DNV-CUK1136989231.92/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	Ms. Coco Geng Yan	☒**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. Liao Ling	☒**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 /9/. 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 03 dated 27/07/2012 /4/ 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 25/04/2012 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 and the corresponding validation report /1//2/;

(b) The monitoring reports and the corresponding verification reports of the previous monitoring periods /5//6/

(c) The revised monitoring plan and its impact on the current verification /7/

(d) The applied monitoring methodology /8/;

(e) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board /10/.

2.2. Follow-up Interviews

On 11/05/2012, 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 Beijing Guotou Energy Conservation Company (BJGT) and China Energy Conservation and Environment Protection Group were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Beijing Guotou Energy Conservation Company (BJGT) (the Project Owner)	➢ 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
China Energy Conservation and Environment Protection Group (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-fulfillment 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 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.

Bureau Veritas Certification 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 **1** Corrective Action Request and **1** Clarification Request.

The CARs and CLs 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, CLs and FARs raised were successfully closed during the validation stage and previous verifications of the Project. 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 the Project has been put into operation and the electricity generated is supplied to North China Power Grid according to the signed Power Purchase Agreement (PPA) /16/. All facilities and equipments including 30 sets of 1500kW wind turbine generators /15/ as described in the registered PDD have been in operation during the monitoring period.

The construction of the Project started on 28/07/2004 /12/; the first turbine put into operation on 30/12/2005 and all the turbines put into operation on 18/08/2006 /13/.

No notification or approval of changes has been requested before for the Project. During the site visit, no changes from the project activity as described in the registered PDD and monitoring plan have been observed or identified. Hence there is no need to request for notification or approval of changes.

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

[Power System]

According to the electricity wiring diagram of the power system, the Project export electricity to and import electricity from NCPG via Zhangbei 220kV substation, where the Project shares the main meter with Zhangbei Mijiagou 49.5MW Windfarm (CDM ref. 0845, hereafter called the Mijiagou Project). This is in accordance with the signed Power Purchase Agreement (PPA)/16/ /24/.

[Metering System]

Metering equipments as per the revised MP have also been found in place, including three meters of which:

A main meter was installed at Zhangbei 220kV substation to monitor electricity supplied by the Project and the Mijiagou Project.

An onsite meter E1 was installed for the Project.

An onsite meter E2 was installed for the Mijiagou Project.

[Management and Operation]

The PP has operated the Project as per registered PDD and the approved revised monitoring plan. The monitoring organization has been set up and all monitoring staffs have been trained. The PP records the meter readings daily for EG_total and weekly for E1 and E2 based on the continuously meter measuring and the records have been kept for verification. ETNs were issued by the grid company to the PP for confirmation of the electricity exported to and imported from the grid. CDM Monitoring & Management Manual /21/ and internal training records /22/ have been provided and verified by the verification team.

- 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 registered PDD.
- The Project is operated as per the registered PDD by the PP.
- Information provided in the MR is in accordance with that stated in the registered PDD and the approved revised monitoring plan.

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 approved revised monitoring plan, including the data and parameters required to be monitored, measurement procedures, monitoring frequency and QC/QA procedures as described in the approved revised monitoring plan, and is able to confirm that the revised monitoring plan is in accordance with the approved methodology applied by the Project.

3.4. Compliance of monitoring with the monitoring plan (206)

A request for revision of the monitoring plan has been sought and approved by EB on 19/10/2007 /7/.

Monitoring has been carried out in accordance with the approved revised monitoring plan.

[Parameters and information flow]

The parameters required by the revised monitoring plan and the way Bureau Veritas Certification 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:

Parameters monitored:

(1) *EG_total* is the total net electricity supplied to the grid at the Zhangbei substation metered by the main meter installed at the Zhangbei 220kV substation.

(2) *E1* is electricity generation of the Project metered by meter E1 installed in outflow side of 110kV project site substation;

(3) *E2 is electricity generation of the Mijiagou Project metered by meter E2 installed in outflow side of 110kV Mijiagou project site substation;*

(4) EG_1 is the net electricity supplied to the grid by the Project, calculated as:

*EG_1 = EG_total * E1 / (E1 +E2)*

(5) *EF,* emission factor of the grid calculated as: *E*F=ωOM * EF_OM + ωBM * EF_BM

Where the default value of ωOM and ωBM is 0.5 according to AM0005 version 01.

(6) EF_OM, Operating Margin Factor;

(7) EF_BM, Build Margin Factor

As described above, the meters have been installed in accordance with the revised monitoring plan. The verification team has on-site checked the location of the meters against the diagram of power connection system and found them to be consistent.

The readings of the meters (Meter E1 and meter E2) are continuously measured and weekly/monthly recorded by the PP; the readings of Main meter are continuously measured and daily recorded by the power grid. The cut-off time for exported and imported electricity is 24:00 of the last day of each month during the monitoring period. The grid company issued Electricity Transaction Notes (ETNs) to the PP to confirm the electricity followed the PPA (/18/). According to the revised Monitoring Plan, the data of parameters above would be cross-checked with the ETNs. The verification team has verified the values provided in the monitoring report and ER spreadsheet /23/ against the relevant documented evidences i.e. the Monthly Reading Records (MRRs) /17/ and the ETNs (/18/) and found them consistent. The MRRs and the ETNs can cover this monitoring period from 01/03/2011 to 29/02/2012.

[Calibration]

During this monitoring period, the installed metering equipments have been operating followed the related regulations and were duly calibrated. The calibration records are shown in Table 2 below.

Table 2 The calibration records of the meters /19//20/

Meter ID	Serial number	Accuracy	Calibration date	Validity	Calibration entity
Main meter	200407007Z0062	0.2S	04/02/2011	Yes	Zhangjiakou Power Gird Company Electricity Metrological Centre
			07/01/2012		
Meter E1	30089907	0.5S	14/10/2010	Yes	
			12/08/2011		
Meter E2	0007049D0145	0.5	14/10/2010	Yes	
			12/08/2011		

The revised monitoring plan requires that metering equipment shall have sufficient accuracy and expected to be calibrated annually.

The verification team has verified the calibration records and the accreditation certificates of the calibration entity /19//20/. All the meters meet the rated accuracy level as described in the revised monitoring plan and are in compliance with the industry standard "Technical administrative code of electric energy metering (DL/T448-2000) /11/. The calibration frequency fulfills the requirement as described in the revised monitoring plan.

✌ 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 revised monitoring plan.
- All parameters stated in the revised 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 parameter is maintained in the identified records. All the data are in compliance with that stated in the Monitoring Report version 03.

As per the methodology AM0005 Version 01 and the revised monitoring plan, the emission reductions for the Project are calculated as the baseline emissions while the project emissions and leakage are not to be considered. Hence the emission reduction is determined by the following formula:

$ER_y = BE_y$

Where,

ER_y: Emission reductions

BE_y: Baseline emissions

[Baseline emissions]

According to the methodology ACM0002, the baseline emissions are:

$BE_y = EG_1 \times EF$

EF: baseline emission factor, determined ex-post as $EF = \omega OM * EF_OM + \omega BM * EF_BM$

Where:

- EF_OM Operating Margin Factor, calculated to be 0.9485 tCO_2e/MWh;
- EF_BM Build Margin Factor, calculated to be 0.4570 tCO_2e/MWh;
- ωOM Default weight factor is 0.5.
- ωBM Default weight factor is 0.5.

EF= 0.5 * 0.9485 tCO_2e/MWh + 0.5 * 0.4570 tCO_2e/MWh =0.7027 tCO_2e/MWh

EG_1 is net electricity generation supplied to the power grid by the Project and calculated as

EG_1 = EG_total * E1 / (E1 +E2);

EG_total is the total net electricity supplied to the grid at the Zhangbei substation metered by the main meter;

E1 is the electricity generation of the Project metered by meter E1

E2 is the electricity generation of the Mijiagou project metered by meter E2

The values of *EG_1* have been crosschecked with the values from ETNs /18/, and the values in ETNs is consistent with *EG_1*. The calculation of net electricity supplied to the grid is presented in Table 3

Table 3 **Calculation of EG_1**

Period	E1	E2	EG_Total	EG_1	ETN	Verified Value
	MWh	MWh	MWh	MWh	MWh	MWh
	A	B	C	D=C*A/(A+B)	E	F=MIN(D,E)
01/03/2011-31/03/2011	14250.720	11281.600	25333.704	14139.864	14139.864	14,139.864
01/04/2011-30/04/2011	10780.000	9075.440	19454.292	10562.207	10562.207	10,562.207
01/05/2011-31/05/2011	12955.360	10945.440	23746.668	12871.813	12871.813	12,871.813
01/06/2011-30/06/2011	6393.200	5778.960	11965.800	6284.813	6284.813	6,284.813
01/07/2011-31/07/2011	5199.040	4962.320	10027.908	5130.760	5130.760	5,130.760
01/08/2011-31/08/2011	4569.840	4584.800	9011.244	4498.259	4498.259	4,498.259
01/09/2011-30/09/2011	4531.120	4526.720	8920.164	4462.249	4462.249	4,462.249
01/10/2011-31/10/2011	7049.680	7050.560	13844.688	6921.912	6921.912	6,921.912
01/11/2011-30/11/2011	7250.320	6540.160	13434.300	7063.059	7063.059	7,063.059

Period	E1	E2	EG_Total	EG_1	ETN	Verified Value
	MWh	MWh	MWh	MWh	MWh	MWh
	A	B	C	D=C*A/(A+B)	E	F=MIN(D,E)
01/12/2011-31/12/2011	8892.400	7077.840	15708.792	8746.823	8746.823	8,746.823
01/01/2012-31/01/2012	6609.680	5731.440	12067.968	6463.385	6463.385	6,463.385
01/02/2012-29/02/2012	11123.200	9696.720	20710.536	11064.761	11064.761	11,064.761
Total	/	/	/	/	/	98,209.904

Therefore the net electricity supplied to the grid in this monitoring period is:

EG_1 = MIN {(*EG_total * E1 / (E1 +E2)*), (ETNs)}=98,209.904 MWh

The baseline emissions of the Project are calculated as:

$BE_y = EF_y \times EG_y$ =0.7027 tCO_2e/MWh* 98,209.904 MWh = 69,012 tCO_2e

[Project emissions]

According to the AM0005 Version 01, the project is a newly built wind power project thus the project emission is not considered.

[Leakage emissions]

No leakage needs to be considered according to AM0005 Version 01.

[Emission reductions]

The emission reductions during the monitoring period from 01/03/2011 to 29/02/2012 are calculated as:

$ER_y = BE_y$ = 69,012 tCO_2e

[Comparison of ERs]

The annual estimated emission reductions are 97,848 tCO_2e as per the registered PDD. This monitoring period is one year and the actual emission reductions are lower than the estimated value in the monitoring period. The variation is due to fluctuation of wind resource and it is deemed to be reasonable.

✌ 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 revised monitoring plan.

- The data used in anthropogenic emission reductions' calculation of this monitoring period have been verified and found consistent with those prescribed in the revised monitoring plan.
- The appropriate methods and formulae for calculating baseline emissions, project emissions and leakages has been properly followed the methodology and revised monitoring plan;
- 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 7th periodic verification of Zhangbei Manjing Windfarm Project, CDM Registration Reference Number 0233, owned by Beijing Guotou Energy Conservation Company (BJGT) which is located in Zhangbei County, Zhangjiakou City, Hebei Province, P. R. China, and applying the methodology AM0005 Version 01. 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 revised monitoring plan; ii) follow-up interviews with project stakeholders; iii) resolution of outstanding issues and the issuance of the final verification report and opinion.

The management of Beijing Guotou Energy Conservation Company (BJGT) 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 approved revised monitoring plan. 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 03 dated 27/07/2012 for the reporting period as indicated below. Bureau Veritas Certification confirms that the Project is implemented as described in validated and registered 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 registered project baseline, approved revised 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:	01/03/2011 to 29/02/2012	
Baseline emissions:	69,012	t CO_2 equivalents
Project emissions:	0	t CO_2 equivalents
Leakage emissions:	0	t CO_2 equivalents
Emission Reductions:	69,012	t CO_2 equivalents

Mr. Liao Ling
Internal Technical Reviewer
23/08/2012

Ms. Coco Geng Yan
Team Leader
23/08/2012

5. REFERENCES

Documents reviewed:

/1/ Registered PDD version 3.3 dated 08/12/2005, UNFCCC ref no.0233
/2/ Validation Report version 01 dated 02/01/2006
/3/ Monitoring Report version 01 dated 20/04/2012 published on 25/04/2012
/4/ Monitoring Report version 03, dated 27/07/2012
/5/ Verification reports for the previous monitoring periods (1st~6th)
/6/ Monitoring reports for the previous monitoring periods (1st~6th)
/7/ Revised monitoring plan approved on 19/10/2007 with the validation opinion
/8/ AM0005 Version 01 Valid from 13 Apr 04 to 01 Mar 06
/9/ Validation and Verification Manual Version 01.2 dated 30/07/2010
/10/ Guidelines on completeness check of requests for issuance (EB48 Annex68)
/11/ Technical administrative code of electric energy metering (DL/T448-2000)
/12/ Engineering Construction Report
/13/ WTGs Operation Log of the PP
/14/ Diagram of power connection system of the Project
/15/ Technical Agreement of the key equipments
/16/ Power Purchase Agreement (PPA) signed with the Power Grid Company
/17/ Daily/Monthly Reading Records of the Project
/18/ ETNs issued by the Grid Company
/19/ Certificate of metrological authorization to Zhangjiakou Power Gird Company Electricity Metrological Centre (code: (JI) FaJi (2008) D011 with the valid period from 18/02/2008 to 17/02/2011 and code: (JI) Fa Ji (2010) D011 with the valid period from 14/02/2010 to 13/02/2012)
/20/ Calibration certificates of the meters
/21/ CDM Monitoring & Management Manual
/22/ Internal Training Records and Qualification Certificate of Operation Staff
/23/ Emission Reductions Calculation Spreadsheet
/24/ Project Information of Zhangbei Mijiagou 49.5MW Windfarm (CDM ref. 0845)

Persons interviewed:

Beijing Guotou Energy Conservation Company (BJGT)
/1/ Mr. LI Haifeng Deputy Manager of the power plant
China Energy Conservation and Environment Protection Group
/2/ Mr. YAO Xi CDM Project Manager
/3/ Ms. LV Xin CDM Project Manager

6. CURRICULA VITAE OF THE DOE'S VERIFICATION TEAM MEMBERS

Ms. Coco Geng Yan	Bureau Veritas Certification, China	Team Leader, Climate Change Lead Verifier. She holds a Master Degree in Ecology and a bachelor degree in Forestry. She has 2 years of experience in CDM in P.R China. She obtained the certificate of CDM Verifier in 2010, Lead Auditor for ISO 14001 and has successfully completed the course assessment for ISO 14064.

Mr. Liao Ling	Bureau Veritas Certification, China	Technical Reviewer, 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.

APPENDIX A: CDM PROJECT VERIFICATION PROTOCOL

Table 1 Verification requirements based on the Clean Development Mechanism Validation and Verification Manual (Version 01.2)

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	Yes, the implementation status of the Project has been briefed in the MR, and consistent with the supporting documents.	OK	OK
b. Does this description include:	EB 54	Ann 34			
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	EB 54	Ann 34	Yes. The construction start date of the project is 28/07/2004	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
periods, etc.)?			and started continued operation on 18/08/2006.		
iv. Total emission reductions achieved in this monitoring period?	EB 54	Ann 34	~~Pending on CAR 1.~~ The total emission reductions achieved in this monitoring period has been changed to 69,012tCO_2e from 71,987tCO_2e after the latest available data in calculation of EF.	~~Pending~~	OK
A.2. Project participants					
c. Are the project participants listed?	EB 54	Ann 34	Yes, the project participants listed in the MR were consistent with the information on the UNFCCC's website.	OK	OK
A.3. Location of 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 Zhangbei County, Zhangjiakou City, Hebei Province, P. R. China. The information of the location also includes the GPS coordinates.	OK	OK
A.4. Technical description of the project					
e. Are a description of the technology applied in the project activity and detailed technical process, including diagrams provided?	EB 54	Ann 34	Yes. The description of the technology applied in the project activity and detailed technical process, including diagrams was provided.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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.	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 registration date of the project activity is 23/03/2006.	OK	OK
A.7. Crediting period of the project activity and related information (start date and choice of crediting period)					
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. The first crediting period of the Project is from 01/01/2006 to 31/12/2012.	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,	EB 54	Ann 34	No changes to the start date of the crediting period post-registration, which was consistent with the information in the UNFCCC's website, no change to the registration date.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
when applicable?					
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	The Project started construction on 28/07/2004 and put into operation on 30/12/2005 before the date of CDM registration. During this monitoring period, the wind farm has a good running, smooth data transfer and grid connection, and no special events happened.	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 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	EB 54	Ann 34	Yes. The wind farm had been put into full operation on 18/08/2006 as per the registered PDD.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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 operated well in this monitoring period.	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	Yes, no events or situations occurred during the monitoring period, which may impact the applicability of the methodology.	OK	OK
B.2. Revision of the monitoring plan					
m. Is it indicated if the monitoring plan has been revised?	EB 54	Ann 34	Yes.	OK	OK
n. Is the date of approval, if revised, included?	EB 54	Ann 34	Yes. The revised monitoring plan has been approved by EB on 19/10/2007.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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 was applied to 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	No notification was requested in this monitoring period.	OK	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. The monitoring systems and procedures including QA/QC has been presented in the MR.	OK	OK
t. Does this section include data collection procedures (information flow including data generation, aggregation, recording, calculation	EB 54	Ann 34	~~CL-1. The detailed locations of the meters and the cross- check process should be indicated.~~ The detailed locations of the meters and their cross-	~~CL-1~~	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
and reporting), organizational structure, roles and responsibilities of personnel, and emergency procedures for the monitoring system?			check process are indicated in the updated MR. Bureau Verification Certification checked the description and found it is consistent with the actual status, thus the CL-1 can be closed.		
u. Does this include line diagrams showing all relevant monitoring points?	EB 54	Ann 34	Yes. The MR included a diagram of power system and monitoring system.	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. The parameters used to calculate baseline, project, and leakage emissions as well as other relevant parameters required by the approved methodology and the revised monitoring plan were included in this section.	OK	OK
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	N/A	OK	OK
x. For each parameter the following information, using the tables					

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
provided, is provided:					
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, the values of monitored parameters have been provided in the MR and emission reductions calculation 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, the procedure has been specified in the MR.	OK	OK
iv. Source of data: logbooks, daily records, surveys, etc?	EB 54	Ann 34	Yes, the source of data has been verified.	OK	OK
v. Where relevant, the calculation method of the parameter?	EB 54	Ann 34	Yes.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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	~~Pending on CAR 1~~ The baseline emission factor for this monitoring period has been determined ex-post as 0.7027tCO_2e/MWh, the data sources have been verified and found consistent.	~~Pending~~	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 AM0005 Version 01, the project is a newly built wind power project thus the project emission is zero.	OK	OK
bb. Was a table used and included in this monitoring report or include references to spreadsheet?	EB 54	Ann 34	N.A.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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	According to the methodology and the registered PDD, no leakage needs to be considered.	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	Yes. The formulae used to calculate the emission reductions and the total of the emission reductions achieved during the monitoring period were included in this section.	OK	OK
ff. Total baseline emissions:	EB 54	Ann 34	~~Pending on CAR 1~~ Yes, the total baseline emissions in this monitoring period were 69,012tCO_2e.	~~Pending~~	OK
gg. Total project emissions:	EB 54	Ann 34	Yes, according to the registered PDD, no need to consider the project emissions since the Project is a wind project.	OK	OK
hh. Total leakage:	EB 54	Ann 34	N.A	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
ii. Total emission reductions:	EB 54	Ann 34	~~Pending on CAR 1~~ The total emission reductions in this monitoring period were 69,012 tCO_2e.	~~Pending~~	OK
E.5 Comparison of actual emission reductions with estimates in the CDM-PDD					
jj. 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	~~Pending on CAR 1~~ The actual emission reduction is lower than the estimated value in PDD and it is deemed to be reasonable.	~~Pending~~	OK
E.6 Remarks on difference from estimated value in the PDD					
kk. 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	~~Pending on CAR 1~~ The actual emission reduction is lower than the estimated value in PDD and it is deemed to be reasonable.	~~Pending~~	OK
2. Project implementation in					

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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	Yes. All facilities and equipments including 30 sets of unit 1500kW wind turbine generator units are in place and in generation during the monitoring period. The project activities had been put into operation and operated as per the registered PDD.	OK	OK
b Have the project participants operated the proposed CDM project activity as per the registered PDD?	VVM	196	Yes. The CDM Project was operated by Beijing Guotou Energy Conservation Company (BJGT) (the PP) as per the registered PDD. The capacity of the Project is 45 MW which consist of 30 sets with unit 1500 kW wind turbine generators and the timeline of the Project was consistent with the registered PDD. The actual management structure of PP is following the description in the revised monitoring plan. The PP established a dedicated CDM team to take responsibility for collecting data and records. Monitoring staffs received training and technical support from the project consulting company.	OK	OK
c Was an on-site visit conducted?	VVM	196	Yes. The on-site visit of this periodic verification has been conducted on 11/05/2012 by Ms. Geng Yan, Climate Change Lead Verifier, Bureau Veritas Certification	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			(China). The audit purpose and methodology were briefed in the opening meeting participated by the following persons: Mr. LI Haifeng Deputy Manager of the power plant Mr. YAO Xi CDM Project Manager of consultant Ms. LV Xin CDM Project Manager of consultant		
d If not, justify the rationale of the decision.	VVM	196	N/A.	OK	OK
e Does the implementation or operation of CDM project activity conform with the description contained in the registered PDD?	VVM	197	Yes. Bureau Veritas Certification has performed an on-site visit and found all facilities and equipments including 30 sets wind turbines and generators are in place and have been in operation during the monitoring period as described in the registered PDD.	OK	OK
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	N.A.	OK	OK
g Was any change identified close to the boundary of the project activity but outside it?	VVM	197	The operation of Zhangbei Mijiagou 49.5 MW Windfarm Project (reference number 0845) is a change and outside the project boundary.	OK	OK
h If yes, which are the potential impacts due to these changes?	VVM	197	The two projects share 110 kV power line, and thus the connection at the 220 kV substation and electricity meter	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			installed there. To solve it, a request for revision of the monitoring plan has been sought and approved by EB on 19/10/2007.		
i Was a notification or a request for approval of changes from the project activity as described in the registered PDD submitted prior to the conclusion of the verification/certification for the corresponding?	VVM	197	N/A.	OK	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 revised Monitoring Plan (MP) kept in accordance with the approved methodology AM0005 Version 01. All calibration of meters in metering system was conducted according to national standard. All data were monitored continuously and record at least monthly and archived electronically and would be kept at least for 2 years after the end of the crediting period. The QA/QC procedures are in place and function.	OK	OK
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	N/A.	OK	OK

	CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
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 frequence and calibration frequence)?	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	Yes. There is no opening issue identified in the validation report and previous reports.	OK	OK
b	Have the monitoring plan and the applied methodology been properly implemented and followed by the project participants?	VVM	205	Yes. All calibration of meters in metering system was conducted according to revised monitoring plan. All data were monitored continuously and record at least monthly and archived electronically and would be kept at least for 2 years after the end of the crediting period. The QA/QC procedures are in place and function.	OK	OK
c	Have all parameters stated in the monitoring plan, the applied methodology and relevant CDM Executive Board decisions been	VVM	205		OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
sufficiently monitored and updated as applicable, including:					
i. Project emission parameters?	VVM	205	Yes. According to the AM0005 Version 01, the project emission of wind power projects is 0.	OK	OK
ii. Baseline emission parameters?	VVM	205	$EG_{_y}$ is the net electricity exported by the Project to the North China Power Grid and calculated as: $EG_{_y} = EG_1 = EG_{_total} * E1/(E1+E2)$ The electricity exported and imported of the Project was monitored by the meter (Manjing Meter E1) installed in the 110KV project site substation of the Project. The electricity exported and imported of the Zhangbei Mijiagou project (ref. 0845) was monitored by the meter (Mijiagou Meter E2) installed in the 110KV project site substation of the Zhangbei Mijiagou project The total electricity exported and imported of the two projects were monitored by the meter (Main Meter E_total) installed in the 220KV substation of the Power grid After the crosscheck with the data in ETNs from the Power grid company, Bureau Veritas Certification found the ETNs were consistent with the EG_y. EF is CO_2 emissions factor of the grid calculated as:	~~CAR 1~~	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			EF=ωOM * EF_OM + ωBM * EF_BM EF_OM is Operating Margin Factor; EF_BM is Build Margin Factor ωOM and ωBM is 0.5 according to default weight factor ~~CAR-1. The data of 2011 should be used for the EF calculation instead of 2010.~~ The latest data (2011) was used for the EF calculation instead of 2010, and the ERs are changed from 71,987 tCO_2e to 69,012tCO_2e. Bureau Veritas Certification checked the calculation of the EF and ER and confirmed the ER value is reasonable and right.		
iii. Leakage parameters?	VVM	205	According to the methodology and the registered PDD, no leakage needs to 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 monitoring, which has established a monitoring team for monitoring of power generation, maintenance and operation of the CDM Project activity. All the records related to generation and maintenance has been satisfactorily maintained. Responsibilities have been allocated to the trained monitoring staff as per approved revised Monitoring Plan. The QA / QC procedures are part of management system and are documented in management procedures.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			The relevant records are collected and archived by the operation department for internal audit. The responsibilities and the procedures included in the Monitoring and Management Manual 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 is controlled and calibrated in accordance with the monitoring plan?	VVM	205	All the accuracies of monitoring meters are in compliance with the revised monitoring plan and in accordance with the industry standards. The meters were installed, maintained and calibrated annually in line with the revised monitoring plan.	OK	OK
i. Are monitoring results consistently recorded as per approved frequency?	VVM	205	Yes. The monitoring results of E1 and E2 are weekly/monthly recorded and monitoring results of EG_total are daily recorded, which complies with the approved frequency. The monthly records are used to calculate the monthly emission reductions.	OK	OK
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 in accordance with the revised 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	EB 52	Ann 60	Yes.	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
specified in the applied monitoring methodology and/or the monitoring plan?					
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 appropriate).	VVM	208	Yes. A complete set of data for the specified monitoring period is available.	OK	OK
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	Yes The ETNs issued by the Power grid company served as the basis for the monthly cross-checking against the PP's Monthly Reading Records monitored via the Project metering system. After the crosscheck with the data in ETNs from the Power grid company, Bureau Veritas Certification found the ETNs support the reality of the	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			Meter Records.		
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	Yes. As per methodology AM0005 Version 01 and the registered PDD, leakage emissions do not need to be considered. Emission reductions are being determined using the formula as given in the Section E of the PDD. $ER_y = BE_y$ The baseline emission is determined by the following formula as per the methodology: $BE_y = EG_y * EF_y$ The net generated electricity by the Project is calculated as $EG_y = EG_1 = EG_{total}*E1/(E1+E2)$ which are calculated and measured by the monitoring meters as per the revised monitoring plan.	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	The Operating Margin Factor is calculated to be 0.9485 tCO_2/MWh, the Build Margin Factor is calculated to be 0.4570 tCO_2/MWh, therefore Emission Factor in the MR is 0.7027CO_2/MWh, calculated ex-post applying the most recent data available including ➢ 2006 IPCC Guidelines for Default Values	OK	OK

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			➢ China Electric Power Yearbook (2009, 2010 and 2011) ➢ China Energy Statistical Yearbook (2011)		

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 participant response	Verification team conclusion
CAR-1 The data of 2011 should be used for the EF calculation instead of 2010.	4.c.ii	The latest data of 2011 was used for the EF calculation and the ERs are changed from 71,987tCO_2e to 69,012 tCO_2e.	The latest data (2011) was used for the EF calculation instead of 2010, and the ERs are changed from 71,987tCO_2e to 69,012tCO_2e. Bureau Veritas Certification checked the calculation of the EF and ER and confirmed the ER value is reasonable and right.
CL-1 The detailed locations of the meters and the cross--check process should be indicated.	1.C.t	The detailed locations of the meters and their cross-check process (Table in Section C of the MR) are indicated in the updated MR.	Bureau Verification Certification checked the description and found it is consistent with the actual status, thus the CL-1 can be closed.