



VERIFICATION REPORT HEBEI CONSTRUCTION INVESTMENT NEW ENERGY Co., LTD.

VERIFICATION OF THE HEBEI GUYUAN COUNTY DONGXINYING 199.5MW WIND POWER PROJECT

REPORT No.BVC/CHINA-VR/8428/2012

REVISION No.01

BUREAU VERITAS CERTIFICATION

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VERIFICATION REPORT

Date of first issue: 01/09/2012	Organizational unit: Bureau Veritas Certification Holding SAS
Client: Hebei Construction Investment New Energy Co., Ltd.	Client ref.: Mr. Du Guang
<p>Summary:</p> <p>Bureau Veritas Certification has conducted the 1st periodic verification of Hebei Guyuan County Dongxinying 199.5MW Wind Power Project, CDM Registration Reference Number 4853, owned by Hebei Construction Investment New Energy Co., Ltd., which is located in south of Guyuan County, Hebei Province, P.R.China., and applying the methodology ACM0002 Version12.1.0, 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.</p> <p>The verification scope is defined as an independent and objective review and ex-post determination of the monitored GHG emission reductions, and consisted of the following three phases: i) desk review of the project design, the baseline and 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 overall verification, from Contract Review to Verification Report & Opinion, was conducted using Bureau Veritas Certification internal procedures.</p> <p>In summary, Bureau Veritas Certification confirms that the project is implemented as planned and described in the 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 114,391 tons of CO₂e for the monitoring period.</p> <p>Our opinion relates to the project's GHG emissions and resulting GHG emission reductions reported and related to the valid and registered project baseline, monitoring plan and its associated documents.</p> <p>Reporting period: 15/09/2011 to 09/01/2012 Baseline emissions: 114,391 t CO₂ equivalents. Project emissions: 0 t CO₂ equivalents. Leakage emissions: 0 t CO₂ equivalents. Emission Reductions: 114,391 t CO₂ equivalents.</p>	

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Project title: Hebei Guyuan County Dongxinying 199.5MW Wind Power Project	
Work carried out by: Mr. Tian Pin - Team Leader	
Internal Technical Review carried out by: Mr.Li Xingtong	
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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 ₂ e	Carbon Dioxide Equivalent
DOE	Designated Operational Entity
DRR	Daily Reading Record
FAR	Forward Action Request
GHG	Green House Gas(es)
MoV	Means of Verification
MP	Monitoring Plan
MR	Monitoring Report
MRR	Daily/Monthly Reading Record
PDD	Project Design Document
PP	Project Participant
PPA	Power Purchase Agreement
UNFCCC	United Nations Framework Convention on Climate Change
VVS	Validation and Verification Standard
WTG	Wind Turbine Generator



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1. INTRODUCTION

Hebei Construction Investment New Energy Co., Ltd. has commissioned Bureau Veritas Certification to verify the emissions reductions of its CDM project Hebei Guyuan County Dongxinying 199.5MW Wind Power Project (hereafter called “**the Project**”) south of Guyuan County, 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. Objective

The objective of CDM verification is to conduct a thorough, independent assessment of the registered project activities.

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. In particular, this assessment shall:

- (a) Ensure that the project activity has been implemented and operated as per the registered PDD or any 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, 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 or any revised approved monitoring plan, and the approved methodology including applicable tool(s);
- (d) Evaluate the data recorded and stored as per the monitoring methodology including applicable tool(s).

1.2. Scope

The verification scope is defined as an independent and objective review and ex-post determination of the monitored GHG emission reductions. The verification is based on the validated and registered project design document, the monitoring report, emission reduction calculation spreadsheet, and supporting 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 133 sets wind turbine generators (model: FD77B, supplied by Dongfang Steam Turbine Co., Ltd.) of 1.5MW, in total of 199.5 MW. The annual expected net electricity supplied to North China Power Grid is 405,685 MWh and the annual estimated emission reductions are 427,936tCO₂e.

Project title:	Hebei Guyuan County Dongxinying 199.5MW Wind Power Project
UNFCCC ref number:	4853
Registration Date:	15/09/2011
Crediting Period:	15/09/2011 to 14/09/2018 (Renewable)
Monitoring Period:	15/09/2011 to 09/01/2012
Project Participants:	Host Party/China: Hebei Construction Investment New Energy Co., Ltd. Annex I Party/United Kingdom of Great Britain and Northern Ireland: Shell Trading International Limited.(UK)
Methodologies used	ACM0002 Version12.1.0 Consolidated methodology for grid-connected electricity generation from renewable sources
Location of the Project:	south of Guyuan County, Hebei Province, P.R.China.
Geo coordinates:	115.2997° E~115.7508° E, 41.3169° N~41.5661° N
UNFCCC view page:	http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1306303373.74/view

[Post Registration Changes]

A request for approval of changes to the start date of the crediting period has been submitted prior to the submission of the request for issuance and approved by the Board, and the Start date has changed from 01/12/2011 to 15/09/2011.

1.4. Verification Team

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

FUNCTION	NAME	TA 1.2	TASK PERFORMED*
Team Leader	Mr. Tian Pin	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> DR <input checked="" type="checkbox"/> SV <input checked="" type="checkbox"/> RI <input type="checkbox"/> TR
Team Member	N/A	<input type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input type="checkbox"/> TR
Technical Specialist	N/A	<input type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input type="checkbox"/> TR
Internal Technical Reviewer (ITR)	Mr.Li Xingtong	<input checked="" type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input checked="" type="checkbox"/> TR
Specialist supporting ITR	N/A	<input type="checkbox"/>	<input type="checkbox"/> DR <input type="checkbox"/> SV <input type="checkbox"/> RI <input type="checkbox"/> TR

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



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 02.0 of the Clean Development Mechanism Validation and Verification Standard, issued by CDM Executive Board at its 65th meeting on 25/11/2011 /7/. 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 assessment 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 02 dated 04/09/2012 /4/ and emission reduction calculation spreadsheet version 02 dated 04/09/2012 /5/. 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 Version 01 submitted by the project participant was also web hosted on the UNFCCC-CDM web site on 06/07/2012 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 including the monitoring plan /1/;
- (b) The validation report /2/
- (c) The applied monitoring methodology /6/;
- (d) Relevant decisions, clarifications and guidance from the CMP and the CDM Executive Board /7/;
- (e) Other information and references relevant to the project activity's resulting emission reductions /8/9/.

2.2. Follow-up Interviews

On 24/07/2012, Bureau Veritas Certification performed a site visit and interviews with project stakeholders to confirm selected information and to resolve issues identified in the document



review. Representatives of Hebei Construction Investment New Energy Co., Ltd. were interviewed (see References). The main topics of the interviews are summarized in Table 1.

Table 1 Interview topics

Interviewed organization	Interview topics
Hebei Construction Investment New Energy Co., Ltd. (the Project Owner)	<ul style="list-style-type: none"> ➤ 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
	<ul style="list-style-type: none"> ➤ 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 resolve issues related to the monitoring, implementation and operations of the registered project activity that could impair the capacity of the registered project activity to achieve emission reductions or influence the monitoring and reporting of emission reductions prior to Bureau Veritas Certification's 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.

A Corrective Action Request (CAR) is raised, if one of the following situations occurs:

- (a) Non-compliance with the monitoring plan or methodology are found in monitoring and reporting and has not been sufficiently documented by the project participants, or if the evidence provided to prove conformity is insufficient;
- (b) Modifications to the implementation, operation and monitoring of the registered project activity has not been sufficiently documented by the project participants;
- (c) Mistakes have been made in applying assumptions, data or calculations of emission reductions that will impact the quantity of emission reductions;
- (d) Issues identified in a FAR during validation to be verified during verification or previous verification(s) have not been resolved by the project participants.

A Clarification Request (CL) is raised, if information is insufficient or not clear enough to determine whether the applicable CDM requirements have been met.

A Forward Action Request (FAR) is raised, for actions if the monitoring and reporting require attention and/or adjustment for the next verification period.



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 may raise Clarification Requests to the verification team and discusses these matters with Team Leader.

After the agreement of the responses on the Clarification Requests from the verification team as well as the PP(s), the finalized verification report is accepted for further processing such as uploading via the UNFCCC interface.

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 CAR and 1 CL.

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 VVS paragraph.

3.1. Remaining issues from validation or previous verification (213)

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

3.2. Compliance of the project implementation with the registered project design document (228)

Bureau Veritas Certification has performed a 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) /12/. 133 sets wind turbine generators (model: FD77B, supplied by Dongfang Steam Turbine Co., Ltd.) of 1.5MW, in total of 199.5 MW, have been in operation during the monitoring period.

No changes to the project design have been identified during this verification. The implementation and operation of the project activity have been conducted in accordance with the description contained in the PDD.

According to Construction Start Order /13/, the Project started construction on started on 25/08/2008. The operation of the Project started on 25/05/2010 and full operation started on 06/10/2010 as per Daily Operation Record /14/.

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 3.6 of this report.

[Power System] /10/

As shown in the diagram of the power system connection /10/ and described in monitoring report, the Project supplies electricity to North China Power Grid via Xiaochang 220kV substation.

[Metering System]

The main meter M1 was installed on outlet of 35/220kV transformer and the backup meter M2 was installed in parallel with M1; there is also a meter M3 installed on the 10kV backup line.

[Management and Operation]

The PP has operated the Project as per the registered PDD. The monitoring organization has been set up and all monitoring staffs have been trained. The monitoring parameters are continuously measured and daily recorded/monthly summarized. CDM Monitoring & Management Manual and CDM monitoring internal training records have been provided and verified by Bureau Veritas Certification. Bureau Veritas Certification confirms that all the documents required by the monitoring plan have been stored.



Corresponding to the paragraph 228 of VVS version 02.0, 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.

3.3. Compliance of the monitoring plan with the monitoring methodology including applicable tool(s) (232)

Bureau Veritas Certification has verified the monitoring plan, including the data and parameters required to be monitored, measurement procedures, monitoring frequency and QC/QA procedures as described in the registered PDD.

- ✌ Corresponding to the paragraph 232 of VVS version 02.0, Bureau Veritas Certification can confirm that the monitoring plan is in accordance with the approved methodology including applicable tool(s) applied by the Project.

3.4. Compliance of monitoring activities with the monitoring plan (235-236)

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

[Parameters and information flow]

The parameters required by the monitoring plan and how 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 report are described below:

Parameters monitored:

- (1) $EG_{\text{facility},y}$ Net electricity supplied by the project activity to the grid in year y is calculated as $EG_{\text{facility},y} = EG_{\text{export},y} - EG_{\text{import},y} - EG_{\text{backupline},y}$
- (2) $EG_{\text{export},y}$ is electricity exported to the grid through the main power line;
- (3) $EG_{\text{import},y}$ is electricity imported from the grid through the main power line;
- (4) $EG_{\text{backupline},y}$ is the electricity delivered to the project through the backup line.

As described above, the two meters have been installed in accordance with the registered PDD /1/. Bureau Veritas Certification has on-site checked the location of the meters against the diagram of power system connection of the Project /10/ and found that they are consistent.

The readings of the meters are continuously monitored and daily/monthly recorded by the PP and the grid company. The cut-off time to calculate the monthly net electricity supplied to the grid by the Project is 24:00 on the last day of each month except on 15/09/2011 and 09/01/2012 for which a separate cut-off statement was issued by the grid. The grid company provided the PP with the Electricity Sales Receipt /16/ monthly, which contains the electricity exported to and



imported from the grid by the Project. A separate cut-off statement was issued by the grid for period 15/09/2011-30/09/2011 and 01/01/2012-09/01/2012 /17/.

The Bureau Veritas Certification has verified the values provided in the Monitoring Report version 02, dated 04/09/2012 /4/ against the relevant documented evidences i.e. the DRRs/MRRs /15/ and the Electricity sales receipts issued by the Grid Company /16/ and found it consistent with the evidences.

Parameters determined ex-ante:

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

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

✌ Corresponding to the paragraph 235 and 236 of VVS version 02.0, Bureau Veritas Certification can confirm that:

- The monitoring has been carried out in accordance with the monitoring plan contained in the registered PDD.
- All parameters required by the monitoring plan have been sufficiently monitored and correctly listed. The monitored data for required parameters have been verified by checking the whole information flow.

3.5. Compliance with the calibration frequency requirements for measuring instruments (243)

The registered monitoring plan requires that “The metering equipments will be properly calibrated and checked annually by an independent third party according to relevant national standard, e.g. the DL/T448-2000 or other national standard, to ensure its accuracy. The accuracy of all metering equipments (M1&M2) shall not be less than 0.5S. The accuracy of metering equipments (M3) shall not be lower than 1.0”.

During this monitoring period, the installed measuring instruments have been operating well and were duly calibrated. The calibration records are shown in Table 2 below.

Table 2 The calibration records of the meters

Meter ID	Serial number	Accuracy	Calibration date	Validity	Calibration entity
M1	ZG37006406	0.2S	13/12/2010 12/12/2011	Yes	A
M2	ZG37006391	0.2S		Yes	A
M3	B24T0P81240 3001807	0.5S		Yes	A

Entity A: Zhangjiakou Electric Energy Measurement Centre (Ji) Fa Ji [2008] No.D011 & Ji Zhijianhan No. (2011) 145 /19/



[Instrument accuracy]

Bureau Veritas Certification has verified the calibration records and the accreditation certificates of the calibration entity. 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) /8/*.

[Calibration frequency]

The calibration frequency fulfills 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) /9/*.

☝ Corresponding to the paragraph 243 of VVS version 02.0, Bureau Veritas Certification can confirm that:

- The calibration is conducted at the frequency as specified by the methodology and the monitoring plan contained in the registered PDD.

3.6. Assessment of data and calculation of emission reductions (246)

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

The critical parameter used for the determination of the Emission Reductions is Net electricity supplied to the grid by the project. The data pertaining to the above parameter are maintained in the identified records. All the data are in compliance with that stated in the Monitoring Report version 02.

As per the methodology ACM0002 Version12.1.0 and the registered PDD, the emission reductions for the Project are calculated as the baseline emissions minus the project emissions. Hence the emission reduction is determined by the following formula:

$$ER_y = BE_y - PE_y$$

Where,

ER_y: Emission reductions

BE_y: Baseline emissions

PE_y: Project emissions

[Baseline emissions]

The baseline emissions are the baseline emission factor times the Net electricity supplied and delivered to the grid by the Project. Therefore,

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

EF_{grid,CM,y}: GHG emission factor of the North China Power Grid, calculated ex-ante in the registered PDD as 1.05485 tCO₂e/MWh



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$EG_{\text{facility},y}$: Net electricity supplied and delivered to the grid by the Project

The $EG_{\text{facility},y}$ can be calculated as:

$$EG_{\text{facility},y} = EG_{\text{export},y} - EG_{\text{import},y} - EG_{\text{backupline},y}$$

where

$EG_{\text{export},y}$ is electricity supplied by the project activity to the grid in year y through the main power line;

$EG_{\text{import},y}$ is electricity imported by the project activity from the grid in year y through the main power line;

$EG_{\text{backupline},y}$ is the electricity delivered to the project through the backup line.

Bureau Veritas Certification has cross-checked the values from the meter reading records /15/ with the electricity sales receipts¹ /16/ for the period from 15/09/2011 to 09/01/2012, and found them consistent. The verified values are shown in the following Table 3 Table 4 and Table5.

Table 3 The verified Electricity delivered to the grid by the Project via the main power line (MWh)

Period	Meter reading records	Electricity sales receipts	Verified $EG_{\text{export},y}$
15/09/2011-30/09/2011	15,227.575	15,227.575	10,155.200*
01/10/2011-31/10/2011	29,243.500	29,243.500	27,969.425*
01/11/2011-30/11/2011	27,969.700	27,969.700	27,969.700
01/12/2011-31/12/2011	34,058.475	34,058.475	34,058.475
01/01/2012-09/01/2012	8,470.000	8,470.000	8,470.000
Total	114,969.250	114,969.250	108,622.800

Note *: Due to a typo error in GSP MR, 10,155.2 was wrongly entered in both the meter readings and sales receipts for Sep. 2011 while 27,969.425 was wrongly entered in both meter readings and sales receipts for Oct. 2011. Although meter readings and sales receipts have been corrected as per the evidences in final version of MR/ER, the value in the GSP MR is lower hence is applied for ER calculation so as to result a lower ER. Such reduced emission reductions are not claimed and omitted by the PP.

Table 4 The verified Electricity imported from the grid by the Project via the main power line (MWh)

Period	Meter reading records	Electricity sales receipts	Verified $EG_{\text{import},y}$
15/09/2011-30/09/2011	10.450	10.450	18.150*
01/10/2011-31/10/2011	54.450	54.450	54.450
01/11/2011-30/11/2011	64.350	64.350	64.350
01/12/2011-31/12/2011	14.850	14.850	14.850
01/01/2012-09/01/2012	27.225	27.225	27.225
Total	171.325	171.325	179.025

¹ A separate cut-off statement was issued by the grid for period 15/09/2011-30/09/2011 and 01/01/2012-09/01/2012



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Note *: Due to a typo error in GSP MR, 18.150 was wrongly entered in both the meter readings and sales receipts for Sep. 2011. Although meter readings and sales receipts have been corrected as per the evidences in final version of MR/ER, the value in the GSP MR is higher hence has been applied for ER calculation to result a lower ER. Such reduced emission reductions are not claimed and omitted by the PP.

Table 5 The verified Electricity imported from the grid by the Project via backup line (MWh)

Period	Meter reading records	Electricity sales receipts	Verified EG _{import,y}
15/09/2011-30/09/2011	0.000	0.000	0.000
01/10/2011-31/10/2011	0.000	0.000	0.000
01/11/2011-30/11/2011	0.000	0.000	0.000
01/12/2011-31/12/2011	0.000	0.000	0.000
01/01/2012-09/01/2012	0.000	0.000	0.000
Total	0.000	0.000	0.000

$$EG_{\text{facility,y}} = EG_{\text{export,y}} - EG_{\text{import,y}} - EG_{\text{backupline,y}} = 108,622.800 - 179.025 - 0 = 108,713.775 \text{ MWh}$$

The baseline emissions of the Project are calculated as:

$$BE_y = EF_{\text{grid,CM,y}} * EG_{\text{facility,y}} = 1.05485 \text{ tCO}_2\text{e/MWh} * 108,713.775 \text{ MWh} = 114,391 \text{ tCO}_2\text{e}$$

[Project emissions]

The Project is a newly built wind power project, thus according to ACM0002 Version12.1.0 the project emissions are zero.

[Leakage emissions]

No leakage needs to be considered according to ACM0002 Version12.1.0.

[Emission reductions]

The emission reductions during the monitoring period from 15/09/2011 to 09/01/2012 are calculated as:

$$ER_y = BE_y - PE_y = 114,391 - 0 = 114,391 \text{ tCO}_2\text{e}$$

[Comparison of ERs]

The annual estimated emission reductions are 427,936 tCO₂e as per the submitted revised PDD, while the estimated emission reductions during this monitoring period (15/09/2011 to 09/01/2012 of 117 days) are 137,174 (427,936*117/365 days=137,174) tCO₂e. The actual emission reductions are less than the estimated value in the monitoring period.

✌ Corresponding to the paragraph 246 of VVS version 02.0, Bureau Veritas Certification can confirm that:

- Data used for the determination of the emission reductions are available and monitored in accordance with the monitoring plan contained in the registered PDD.



- Information and data provided in the monitoring report have been cross-checked with other sources such as plant logbooks, inventories, purchase records, laboratory analysis.
- Appropriate methods and formulae for calculating baseline emissions, project emissions and leakage have been followed.
- Assumptions, emission factors and default values that were applied in the calculations have been justified.



4. VERIFICATION OPINION

Bureau Veritas Certification has performed the 1st periodic verification of Hebei Guyuan County Dongxingying 199.5MW Wind Power Project, CDM Registration Reference Number 4853, which is located in south of Guyuan County, Hebei Province, P.R.China., and applying the methodology ACM0002 Version12.1.0. 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, the baseline and 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 Hebei Construction Investment New Energy 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 monitoring plan contained in the registered 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 02 dated 04/09/2012 for the reporting period as indicated below. Bureau Veritas Certification confirms that the project is implemented as described in the 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, 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:	15/09/2011 to 09/01/2012	
Baseline emissions:	114,391	t CO ₂ equivalents
Project emissions:	0	t CO ₂ equivalents
Leakage emissions:	0	t CO ₂ equivalents
Emission Reductions:	114,391	t CO ₂ equivalents

Mr.Li Xingtong
Internal Technical Reviewer
20/09/2012

Mr. Tian Pin
Team Leader
20/09/2012



5. REFERENCES

Documents reviewed:

- /1/ Registered PDD version 6.0 dated 07/09/2011, UNFCCC ref no.4853
- /2/ Validation Report Version 04.3, dated 08/09/2011
- /3/ Monitoring Report Version 01 dated 01/06/2012
- /4/ Monitoring Report version 02, dated 04/09/2012
- /5/ ER Calculation Spreadsheet version 02, dated 04/09/2012
- /6/ ACM0002 Version12.1.0
- /7/ Validation and Verification Standard Version 02.0 dated 25/11/2011
- /8/ Technical Administrative Code of Electric Energy Metering (DL/T 448-2000)
- /9/ Verification Regulation of Electrical Energy Meter with Electronics (JJG 596-1999)
- /10/Diagram of power connection system of the Project
- /11/Equipments purchase agreement
- /12/Signed Power Purchase Agreement (PPA) with grid company
- /13/Construction Start Order
- /14/Daily Operation Record
- /15/Daily/Monthly Meter Reading Records of the Project
- /16/Electricity sales receipts issued by the Grid Company
- /17/Separate cut-off statement for period 15/09/2011-30/09/2011 and 01/01/2012-09/01/2012
- /18/Calibration records
- /19/Certificate of metrological authorization to Zhangjiakou Electric Energy Measurement Centre, whose authorized certificates are No. (Ji) Fa Ji [2008] No.D011 & Ji Zhijianhan No. (2011) 145 with the valid period 18/02/2008 to 31/12/2011
- /20/CDM Monitoring & Management Manual
- /21/Internal Training Records and Qualification Certificate of Operation Staff

Persons interviewed:

Hebei Construction Investment New Energy Co., Ltd.

Du Guang Project Manager

Liu Hongwei Duty Manager

Zhang Zhiwei Duty Officer

Zhou Xin Duty Officer



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

Mr. Tian Pin	Bureau Veritas Certification, China	<p>Team Leader, Climate Change Lead Verifier,</p> <p>He holds a MEng in Industrial Engineering and a MSc in Product Lifecycle Management. Before joining BV in 2009, he gained two years working experience in project management in various industrial sectors. He obtained the certificate of CDM Verifier, Lead Auditor for ISO 14001 and has successfully completed the course assessment for ISO 14064.</p>
Mr. Li Xingtong	Bureau Veritas Certification, China	<p>Technical Reviewer, Climate Change Lead Verifier.</p> <p>He holds a Master Degree in Landscape Ecology and Bachelor Degree in Environmental Engineering. Before joining BV in 2009, he gained one year of CDM technical experience in P.R China. He obtained the certificate of CDM Verifier, Lead Auditor for ISO 14001 and completed the course assessment for the ISO 14064:2006.</p>



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APPENDIX A: CDM PROJECT VERIFICATION PROTOCOL**Table 1** Verification requirements based on the Clean Development Mechanism Validation and Verification Standard (Version 02.0)

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
1 Compliance of the project implementation with the registered project design document					
1.a Has the implementation and operation of the project activity been conducted in accordance with the description contained in the registered PDD?	VVS	226	Yes.	OK	OK
1.b Are all physical features of the project activity in the registered PDD in place?	VVS	227	Yes. Hebei Guyuan County Dongxinying 199.5MW Wind Power Project is a wind power project located at south of Guyuan County, Hebei Province, P.R.China., 115.2997° E~115.7508° E, 41.3169° N~41.5661° N. As described in the registered PDD, 133 sets wind turbine generators (model: FD77B, supplied by Dongfang Steam Turbine Co., Ltd.) of 1.5MW, in total of 199.5 MW have been in operation during the monitoring period. The Project supplies electricity to North China Power Grid via Xiaochang 220kV substation	OK	OK
1.c Have the project participants operated the project activity as per the registered PDD or any approved revised PDD?	VVS	227	Yes. During this monitoring period from 15/09/2011 to 09/01/2012, the Project is operated as per the registered PDD by Hebei Construction Investment New Energy Co.,	OK	OK



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			Ltd. (the PP). The electricity generated has been delivered properly to the grid as per the PPA signed with the grid company.		
1.d Was an on-site visit conducted?	VVS	227	<p>Yes.</p> <p>The on-site visit of 1st periodic verification has been conducted by Bureau Veritas Certification on 24/07/2012.</p> <p>Mr. Tian Pin, Climate Change Lead Verifier of Bureau Veritas Certification China</p> <p>The audit purpose and methodology were briefed in the opening meeting participated by the following persons.</p> <p>Du Guang Project Manager of Hebei Construction Investment New Energy Co., Ltd.</p> <p>Liu Hongwei Duty Manager of Hebei Construction Investment New Energy Co., Ltd.</p> <p>Zhang Zhiwei Duty Officer of Hebei Construction Investment New Energy Co., Ltd.</p> <p>Zhou Xin Duty Officer of Hebei Construction Investment New Energy Co., Ltd.</p>	OK	OK
1.e If not, justify the rationale of the decision.	VVS	227	N.A.	OK	OK
2 Compliance of the monitoring plan with the monitoring methodology including applicable tool(s)					



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CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
2.a Is the monitoring plan of the project activity in accordance with the applied methodology including applicable tool(s)?	VVS	229	Yes. The monitoring plan (MP) applied by the Project complies with methodology ACM0002 Version12.1.0.	OK	OK
2.b Is the project implementation in accordance with the provisions of the registered PDD and/or an approved revised PDD?	VVS	230	Yes.	OK	OK
3 Compliance of monitoring activities with the registered monitoring plan					
3.a Have the monitoring of parameters related to the GHG emissions reductions in the project activity been implemented in accordance with the monitoring plan contained in the registered PDD or any accepted revised monitoring plan?	VVS	233	Yes.	OK	OK
3.b Has the monitoring plan been properly implemented and followed by the project participants?	VVS	234	Yes. The MP have been properly implemented and followed by the project participants. The monitoring organization has been set up and in functions. All monitoring staffs have been trained and the training records have been provided and verified satisfactorily. All parameters indicated in the MP have been measured and recorded in the respective documents. The QA/QC procedures are in place and function.	OK	OK
3.c Have all parameters stated in the monitoring plan and relevant Board decisions been monitored and updated as applicable, including:	VVS	234			
3.c.i Project emission parameters?	VVS	234	According to the registered PDD and ACM0002	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			Version12.1.0, PE=0.		
3.c.ii Baseline emission parameters?	VVS	234	<p>As per the registered PDD and ACM0002 Version12.1.0,</p> <p>$EG_{\text{facility},y}$ Net electricity supplied by the project activity to the grid in year y is calculated as $EG_{\text{facility},y} = EG_{\text{export},y} - EG_{\text{import},y} - EG_{\text{backupline},y}$</p> <p>$EG_{\text{export},y}$ is electricity exported to the grid through the main power line;</p> <p>$EG_{\text{import},y}$ is electricity imported by the project activity from the grid in year y through the main power line;</p> <p>$EG_{\text{backupline},y}$ is the electricity delivered to the project through the backup line.</p>	OK	OK
3.c.iii Leakage parameters?	VVS	234	According to the registered PDD and ACM0002 Version12.1.0, not leakage needs to be considered.	OK	OK
3.c.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?	VVS	234	Yes. A monitoring team has been established by the PP and responsibilities were allocated to the trained monitoring staff for monitoring of power generation, maintenance and operation of the Project.	OK	OK
3.d Is the equipment used for monitoring in accordance with section 4. below and is controlled and calibrated in accordance with the monitoring plan, the applied methodology, the Board guidance, local/national standards, or as per the manufacturer.s specification?	VVS	234	Yes. The installation and annual calibration of the electricity meters are in accordance with the industry standard “Technical Administrative Code of Electric Energy Metering” (DL/T 448-2000) and national “Verification Regulation of Electrical Energy Meter with Electronics” (JJG 596-1999) hence complies with the	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl												
			description in the MP.														
3.e Are monitoring results consistently recorded as per approved frequency?	VVS	234	<p>CL-1 Data collection procedures have not been described in the MR.</p> <p>Bureau Veritas Certification has assessed the data collection procedures added in the final MR and found appropriate. Hence this CL is closed.</p> <p>All required parameters have been continuously measured and daily/monthly recorded as per the MP.</p>	CL-4	OK												
3.f Have quality assurance and quality control procedures been applied in accordance with the monitoring plan or the revised monitoring plan?	VVS	234	<p>Yes.</p> <p>The QA/QC procedures in the monitoring plan have been stipulated in the CDM Monitoring and Management Manual and followed by the PP during daily operation and management.</p>	OK	OK												
4 Compliance with calibration frequency requirements for measuring instruments																	
4.a Is the calibration of those measuring equipments that have an impact on the claimed emission reductions conducted by the project participants at a frequency specified in the applied monitoring methodology and/or the monitoring plan?	VVS	237	<p>Yes. Relevant installation/calibration information is verified and shown in the table below.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>SN/ Accuracy</th> <th>Calibration Date – (Validity)</th> <th>Calibration Frequency</th> </tr> </thead> <tbody> <tr> <td>M1</td> <td>ZG37006406 / 0.2S</td> <td rowspan="3" style="text-align: center;">13/12/2010 12/12/2011 (Yes)</td> <td rowspan="3" style="text-align: center;">Annually</td> </tr> <tr> <td>M2</td> <td>ZG37006391 / 0.2S</td> </tr> <tr> <td>M3</td> <td>B24T0P812403001807/</td> </tr> </tbody> </table>		SN/ Accuracy	Calibration Date – (Validity)	Calibration Frequency	M1	ZG37006406 / 0.2S	13/12/2010 12/12/2011 (Yes)	Annually	M2	ZG37006391 / 0.2S	M3	B24T0P812403001807/	OK	OK
	SN/ Accuracy	Calibration Date – (Validity)	Calibration Frequency														
M1	ZG37006406 / 0.2S	13/12/2010 12/12/2011 (Yes)	Annually														
M2	ZG37006391 / 0.2S																
M3	B24T0P812403001807/																



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			0.5S		
4.b During verification of a certain monitoring period, has the calibration been delayed and has the calibration has been implemented after the monitoring period in consideration (i.e. the results of delayed calibration are available)?	VVS	238	No. All meters have been duly calibrated.	OK	OK
4.c If yes, is the following conservative approach adopted in the calculation of emission reductions?	VVS	238			
4.c.i Applying the maximum permissible error of the instrument to the measured values taken during the period between the scheduled date of calibration and the actual date of calibration, if the results of the delayed calibration do not show any errors in the measuring equipment, or if the error is smaller than the maximum permissible error; or	VVS	238	N.A.	OK	OK
4.c.ii Applying the error identified in the delayed calibration test, if the error is beyond the maximum permissible error of the measuring equipment.	VVS	238	N.A.	OK	OK
4.d Has the error has been applied:	VVS	239			
4.d.i In a conservative manner, such that the adjusted measured values of the delayed calibration shall result in fewer claimed emission reductions?	VVS	239	N.A.	OK	OK
4.d.ii Applying the error identified in the delayed calibration test, if the error is	VVS	239	N.A.	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
beyond the maximum permissible error of the measuring equipment.					
4.e In cases where the results of the delayed calibration are not available, or the calibration has not been conducted at the time of verification, prior to finalizing verification, were the project participants requested to conduct the required calibration have the project participants calculated the emission reductions conservatively using the approach mentioned in item "c" above?	VVS	240	N.A.	OK	OK
4.f Is it possible for the project participants to conduct the calibration at a frequency specified by either the applied methodology, guidance provided by the Board, and/or the registered monitoring plan?	VVS	241	Yes. calibration has been conducted at a frequency specified by the registered monitoring plan.	OK	OK
4.g If no, were the requirements for post registration changes, in section of E of the VVS, followed?	VVS	241	N.A.	OK	OK
4.h Do the monitoring methodology or the monitoring plan specify any requirements for calibration frequency for measuring equipments?	VVS	242	Yes. The MP requires "The metering equipments will be properly calibrated and checked annually by an independent third party according to relevant national standard, e.g. the DL/T448-2000 or other national standard, to ensure its accuracy. The accuracy of all metering equipments (M1&M2) shall not be less than 0.5s. The accuracy of metering equipments (M3) shall not be lower than 1.0"	OK	OK
4.i If no, are the equipments calibrated either in accordance with the specifications of the	VVS	242	N.A.	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
local/national standards, or as per the manufacturer's specification?					
4.j If neither local/national standards nor the manufacturer's specification are available, were international standards used?	VVS	242	N.A.	OK	OK
5 Assessment of data and calculation of emission reductions					
5.a Were the data and calculations of GHG emission reductions achieved by/resulting from the project activity by the application of the selected approved methodology assessed?	VVS	244	Yes.	OK	OK
5.b Is a complete set of data for the specified monitoring period is available? (If 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 either raise a CAR for the project participants to comply with the requirements of appendix 1 of the Project standard or submit a request for deviation prior to submitting request for issuance, if appropriate).	VVS	245	Yes. A complete set of data is available, i.e. turbine generation log, daily/monthly reading records of the meters, sales receipts, which can cover the monitoring period.	OK	OK
5.c Has information provided in the monitoring report been cross-checked with other sources such as plant log books, inventories, purchase records, laboratory analysis?	VVS	245	CAR-1 The reported electricity exported in Sep, Oct. 2011 and electricity imported in Sep. 2011 in the MR are not consistent with the meter reading records and sales receipts. Bureau Veritas Certification has verified the meter reading records and the sales receipts and confirms the typo	CAR-1	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
			<p>errors in the GSP MR have resulted in 6,702 tCO₂e of emission reductions lower than applying the actual meter readings and the sales receipts. Such reduced emission reductions are not claimed and omitted by the PP. Hence this CAR is closed.</p> <p>The information in the monitoring report has been checked onsite against daily/monthly electricity meter reading records, sales receipts issued by the grid.</p>		
5.d Have calculations of baseline emissions, and 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?	VVS	245	<p>The calculation of the baseline emissions, project emissions and leakage has been carried out in accordance with MP and ACM0002 Version12.1.0.</p> <p>The baseline emission (BE_y) is determined by the formula: $BE_y = EG_{\text{facility},y} \times EF_{\text{grid,CM},y}$</p> <p>The project emissions (PE_y) are zero as the Project is a wind power project.</p> <p>Leakage emissions (LE_y) do not need considered.</p> <p>Emission reductions are determined as follows: $ER_y = BE_y$</p>	OK	OK
5.e Have any assumptions used in emission calculations been justified?	VVS	245	<p>No.</p> <p>There are no assumptions in emission calculations.</p>	OK	OK
5.f Have appropriate emission factors, IPCC default values and other reference values been	VVS	245	<p>Yes.</p>	OK	OK



VERIFICATION REPORT

CHECKLIST QUESTION	Ref.	§	COMMENTS	Draft Concl	Final Concl
correctly applied?			The Emission factor of the Grid in the monitoring report is 1.05485 tCO ₂ /MWh, which is same as described in the registered PDD.		



VERIFICATION REPORT

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

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
<p>CAR-1 The reported electricity exported in Sep, Oct. 2011 and electricity imported in Sep. 2011 in the MR are not consistent with the meter reading records and sales receipts.</p>	<p>Table 1 5.c</p>	<p>Due to a typo error in GSP MR, 10,155.2 was wrongly entered in both the meter readings and sales receipts for Sep. 2011 while 27,969.425 was wrongly entered in both meter readings and sales receipts for Oct. 2011. Although meter readings and sales receipts have been corrected as per the evidences in final version of MR/ER, the value in the GSP MR is lower hence is applied for ER calculation so as to result a lower ER. Such reduced emission reductions are not claimed and omitted by the PP.</p> <p>Due to a typo error in GSP MR, 18.150 was wrongly entered in both the meter readings and sales receipts for Sep. 2011. Although meter readings and sales receipts have been corrected as per the evidences in final version of</p>	<p>Bureau Veritas Certification has verified the meter reading records and the sales receipts and confirms the typo errors in the GSP MR have resulted in 6,702 tCO₂e of emission reductions lower than applying the actual meter readings and the sales receipts.</p> <p>Such reduced emission reductions are not claimed and omitted by the PP.</p> <p>Hence this CAR is closed.</p>



VERIFICATION REPORT

Draft report clarifications and corrective action requests by verification team	Reference to checklist question in Periodic Verification Checklist	Summary of project owner response	Verification team conclusion
		MR/ER, the value in the GSP MR is higher hence has been applied for ER calculation to result a lower ER. Such reduced emission reductions are not claimed and omitted by the PP.	
CL-1 Data collection procedures have not been described in the MR.	Table 1 3.e	The description regarding to data collection procedures has been added into the MR.	Bureau Veritas Certification has assessed the data collection procedures added in the final MR and found appropriate. Hence this CL is closed.