

VERIFICATION REPORT

HEBEI GUYUAN COUNTY

DONGXINYING 199.5 MW WIND

POWER PROJECT



Document Prepared By: Bureau Veritas Certification Holding SAS

Report No.BVC/China-VR/7062/2012

Project Title	Hebei Guyuan County Dongxinying 199.5 MW Wind Power Project
Version	Revision No.01
Report ID	BVC/China-VR/7062/2012

Report Title	Verification Report of Hebei Guyuan County Dongxinying 199.5 MW Wind Power Project
Client	Hebei Construction Investment New Energy Co., Ltd.
Pages	26
Date of Issue	24/07/2012
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Summary:

Bureau Veritas Certification has made the Pre-CDM VCS verification of Hebei Guyuan County Dongxinying 199.5 MW Wind Power Project, owned by Hebei Construction Investment New Energy Co., Ltd., which is located in the south of Guyuan County, Zhangjiakou City, Hebei Province, P.R.China, with UNFCCC Reference No. 4853 on the basis of Voluntary Carbon Standard (VCS) Version 3 Program, as well as criteria given to provide for consistent project operations, monitoring and reporting. UNFCCC criteria refer to Article 12 of the Kyoto Protocol, as well as the host country criteria.

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

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

In summary, Bureau Veritas Certification confirms that the Project is implemented as planned and described in the VCS-PD. Installed equipment being essential for generating emission reduction runs reliably and is calibrated appropriately. The monitoring system is in place and the Project is ready to reduce GHG emission. The GHG emission reduction is calculated without material misstatements.

Our opinion relates to the Project's GHG emissions and the resulting GHG emission reductions viz. Voluntary Carbon Units (VCUs) reported are based on the valid project baseline, monitoring plan and 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 following statement:

Reporting period	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Emission Reductions (tCO ₂ e)
25/05/2010~31/12/2010	187,044	0	0	187,044
01/01/2011~14/09/2011	333,198	0	0	333,198
Total	520,242	0	0	520,242

Table of Contents

1	Introduction	4
1.1	Objective.....	4
1.2	Scope and Criteria.....	4
1.3	Level of assurance	4
1.4	Summary Description of the Project.....	5
2	Validation Process, Findings and Conclusion.....	6
2.1	Validation Process.....	6
2.2	Validation Findings	7
2.2.1	Gap Validation.....	7
2.2.2	Methodology Deviations.....	10
2.2.3	New Project Activity Instances	10
2.3	Validation Conclusion	10
3	Verification Process.....	11
3.1	Method and Criteria.....	11
3.2	Document Review	11
3.3	Interviews.....	11
3.4	Site Inspections.....	12
3.5	Resolution of Any Material Discrepancy	12
4	Verification Findings.....	15
4.1	Project Implementation Status	15
4.2	Accuracy of GHG Emission Reduction or Removal Calculations	15
4.3	Quality of Evidence to Determine GHG Emission Reductions or Removals	18
4.4	Management and Operational System.....	21
5	Verification conclusion.....	23
	References.....	24
	Curricula Vitae of the DOE's verification team members	26

1 INTRODUCTION

1.1 Objective

Hebei Construction Investment New Energy Co., Ltd. has commissioned Bureau Veritas Certification to verify the emission reductions of the Verified Emission Reduction (VER) of Hebei Guyuan County Dongxingying 199.5 MW Wind Power Project (hereafter referred to as **“the Project”**), which is located in the south of Guyuan County, Zhangjiakou City, Hebei Province, P.R.China for the period from 25/05/2010 to 14/09/2011, prior to its first CDM crediting period.

Bureau Veritas Certification as the verification body of the Project has been accredited as a DOE by UNFCCC and also meets the competence requirements as set out in ISO 14065:2007.

Verification is the independent review and ex post determination by the verification body of the monitored reductions in GHG emissions during defined verification period.

Certification is the written assurance by a Certification Entity that, during a specific period in time, a project activity achieved the emission reductions as verified. According to the VVM, the Certification Entity is defined as an entity which has been accredited as a DOE by the CDM Executive Board for the particular scope into which the project falls or has been accredited as an approved Certification Entity by the VCS Steering Committee. Bureau Veritas Certification is an accredited DOE for the particular scope into which the Project falls.

The objective of verification is to verify and certify the Verified Carbon Units (VCUs) generated by the Project from 25/05/2010 to 14/09/2011.

VCS Version 3 Program and 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.

1.2 Scope and Criteria

The verification scope is defined as an independent and objective review of the VCS Project Description (VCS-PD), the Project’s baseline study and Monitoring Report (MR) and other relevant documents. The information in these documents is reviewed against VCS Version 3 requirements, UNFCCC rules and associated interpretations.

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

1.3 Level of assurance

The verification report is based on the VCS-PD, the VCS Monitoring Report (MR), CDM-PDD, supporting evidences made available to the verifier and information collected through performing interviews and during the on-site assessment. The verification conclusion is assured the level of assurance of the Project is high.

1.4 Summary Description of the Project

The Project is owned by Hebei Construction Investment New Energy Co., Ltd. (hereafter referred to as “the PP”) and is located in the south of Guyuan County, Zhangjiakou City, Hebei Province, P.R.China. The Project consists of 133 sets of wind turbine generators (WTGs) with a unit installed capacity of 1.5MW, providing a total installed capacity of 199.5MW. The annual expected electricity supplied to North China Power Grid (NCPG) is 405,685MWh and the annual estimated emission reductions are 427,936tCO₂e.

The Project has been registered on 15/09/2011 (UNFCCC ref. No. 4853) under approved CDM methodology ACM0002 Version 12.1.0 “Consolidated methodology for grid-connected electricity generation from renewable sources”. The Project Start Date is 25/05/2010, when the first WTG started electricity generation. The crediting period for the Project under the VCS is from 25/05/2010 to 14/09/2011.

Project title:	Hebei Guyuan County Dongxinying 199.5 MW Wind Power Project
UNFCCC Ref number:	4853
CDM Registration Date:	15/09/2011
VCS Monitoring Period:	25/05/2010 to 14/09/2011
Project Participants:	P.R.China (host): Hebei Construction Investment New Energy Co., Ltd.
Methodologies used	ACM0002 Version 12.1.0
Location of the Project:	the south of Guyuan County, Zhangjiakou City, Hebei Province, P.R.China
Geo coordinates:	Longitude: 115.2997°~115.7508°E, Latitude: 41.3169°~41.5661°N
UNFCCC link:	http://cdm.unfccc.int/Projects/DB/TUEV-RHEIN1306303373.74/view

2 VALIDATION PROCESS, FINDINGS AND CONCLUSION

2.1 Validation Process

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

The Project Description (VCS-PD) ^[8] and the Monitoring report (VCS-MR) ^[11] submitted by Hebei Construction Investment New Energy Co., Ltd. and additional background documents related to the project design and baseline, i.e. country Law, registered CDM-PDD ^[4], validation report, Approved methodology, Clarifications on Validation Requirements to be Checked by a certified validation body were reviewed.

Bureau Veritas Certification verified the information contained in the documents reviewed against the requirements set in VCS Standard Version 3.2 effective as the 01/02/2012 ^[3] and the Clean Development Mechanism Validation and Verification Manual version 01.2 ^[2], issued by CDM Executive Board at its 55th meeting on 30/07/2010.

In addition, on 06/06/2012, 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 Hebei Construction Investment New Energy Co., Ltd. were interviewed (see References). The main topics of the interviews are summarized in the table below.

Table 1 Interview topics

Interviewed organization	Interview topics
Hebei Construction Investment New Energy Co., Ltd.	↗ Project background information ↗ Project technology, operation, maintenance and monitoring capability. ↗ Project monitoring and management plan. ↗ Project approvals (incl. EIA approval, LOA, FSR approval) ↗ Government policies related to wind power projects ↗ Applicability of selected methodology. ↗ Baseline determination. ↗ Emission reductions calculation. ↗ Emission reduction monitoring plan.

During the validation process, no material discrepancies were found and Bureau Veritas Certification did not consider it necessary to raise any corrective actions, clarifications or other findings.

2.2 Validation Findings

2.2.1 Gap Validation

According to the VCS standard Version 3.2 for projects validated under the CDM, the cover page and sections 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4 and 1.13 of the VCS Project Description Template shall be completed and a validation/verification body shall undertake a validation of same to provide a gap validation for the project's compliance with the VCS rule.

Bureau Veritas Certification verified the information reported in the VCS-PD version 03 dated 24/07/2012^[8] against the CDM-PDD^[4], CDM validation report^[12], Project Host country (China) LoA^[14], Project Operation Log^[16], Business License of the PP^[13], Power Purchase Agreement (PPA)^[15] and UNFCCC website^[5] and found consistent. The detailed validation process is documented in the table below

Table 2 Gap Validation of the Project

CRITERIA OF VCS-PD	Ref	COMMENTS	Concl.
1. Project Details			
1.2 Sectoral Scope and Project Type	VCS-PD, CDM-PDD, CDM Validation Report	As a wind power plant, the Project falls into the sectoral scope I Energy Industries (renewable sources). Moreover, the Project is not a Grouped Project.	OK
1.3 Project Proponent	VCS-PD, CDM-PDD, CDM Validation Report, LoA, UNFCCC website, PPA	The Project owner is Hebei Construction Investment New Energy Co., Ltd.	OK
1.5 Project Start Date	VCS-PD, Project operation log	The project starting date in VCS Version 3.2 is defined as the date when the Project began generating GHG emission reduction or removals. As per operation log of the Project, on 25/05/2010 the first WTG of the Project started to deliver electricity to the grid. As a consequence the Project's starting date is	OK

CRITERIA OF VCS-PD	Ref	COMMENTS	Concl.
		25/05/2010.	
1.6 Project Crediting Period	VCS-PD, Project operation log, CDM- PDD, CDM Validation report, UNFCCC website	The Project starting date is 25/05/2010 and the Project was registered as CDM project on 15/09/2011. Consequently the VCS crediting period is from 25/05/2010 to 14/09/2011.	OK
1.7 Project Scale and Estimated GHG Emission Reductions or Removals	VCS-PD, CDM-PDD, CDM Validation report	The Project is expected to achieve 427,936tCO₂e per year. It is thus categorized as 'Project' as per VCS 3.2 definition. During the VCS crediting period, the estimated GHG emission reductions are 560,420 tCO₂e.	OK
1.9 Project Location	Site visit, VCS-PD, CDM-PDD, CDM Validation report	The Project is located in the south of Guyuan County, Zhangjiakou City, Hebei Province, P.R.China. The Project coordinates of Longitude 115.2997°~115.7508°E and Latitude 41.3169°~41.5661°N have been verified during the onsite visit.	OK
1.10 Conditions Prior to Project Initiation	VCS-PD, CDM-PDD, CDM Validation report	The scenario existing prior to the start of the implementation of the project activity is that local electricity service is provided by the North China Power Grid (NCPG), which is dominated by fossil-fuel fired power plants. The Project involves the installation of 133 wind turbines with unit capacity of 1,500kW. The total installed capacity of the Project is 199.5 MW. The purpose of the project is to generate renewable power by wind energy to replace power from North China Power Grid which is dominated by fossil-fuel fired	OK

CRITERIA OF VCS-PD	Ref	COMMENTS	Concl.
		power plants. Since the project does not generate GHG emissions, the implementation of the Project was not to generate GHG emissions primarily for the purpose of its subsequent removal or destruction.	
1.12.1 Right of use	LoA, CDM-PDD, CDM Validation Report, PP's business license, PPA	Hebei Guyuan County Dongxinying 199.5 MW Wind Power Project in Hebei Province is developed by Hebei Construction Investment New Energy Co., Ltd.. The Letter of Approval (No.1566) issued by National Development and Reform Commission of P.R. China^[14] is provided to demonstrate the right of use of the Project. Information has also been verified by checking the Business Licence of the PP^[13] and the PPA signed between the PP and the grid company^[15].	OK
1.12.2 Emission Trading Programs and Other Binding Limits	VCS-PD, CDM-PDD, CDM Validation Report, UNFCCC website	N.A. to the Project. The Project has been registered as a CDM project on 15/09/2011. Only GHG emission reductions achieved from the starting date of the Project 25/05/2010 to 14/09/2011 could be verified as VCUs under the VCS version 3.2.	OK
1.12.3 Participation under Other GHG Programs	VCS-PD, CDM-PDD, CDM Validation Report, UNFCCC website	The Project has been registered as a CDM project (UNFCCC Reference No.4853) on 15/09/2011. Only GHG emission reductions achieved from the starting date of the Project 25/05/2010 to 14/09/2011 could be verified as VCUs under the VCS Version 3.2 program.	OK
1.12.4 Other Forms of Environmental Credit	VCS-PD, CDM-PDD, CDM Validation	The project does not intend to generate any other form of GHG-related environmental credit for GHG emission reductions or	OK

CRITERIA OF VCS-PD	Ref	COMMENTS	Concl.
	Report, UNFCCC website	removals claimed under the VCS Program. The Project only will generate CER from 15/09/2011 on.	
1.13 Additional Information Relevant to the Project - Eligibility Criteria - Leakage Management - Commercially Sensitive Information - Further Information	VCS-PD, CDM-PDD, CDM Validation Report, UNFCCC website	- It is not a grouped project; - Leakage is 0; - No commercial sensitive information has been excluded to the public - There is not any additional relevant legislative, technical, economic, sectoral, social, environmental, geographic, site-specific and/or temporal information that may have a bearing on the eligibility of the project, the net GHG emission reductions or removals, or the quantification of the project's net GHG emission reductions or removals	OK

2.2.2 Methodology Deviations

No methodology deviation has been applied to the Project

2.2.3 New Project Activity Instances

Not applicable since Hebei Guyuan County Dongxinying 199.5 MW Wind Power Project is not a grouped project.

2.3 Validation Conclusion

In Bureau Veritas Certification's opinion the Project conforms to the relevant criteria of VCS Standard Version 3.2.

3 VERIFICATION PROCESS

3.1 Method and Criteria

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

The Project was verified against the requirements set in VCS Standard Version 3.2 effective as the 01/02/2012^[3] and the Clean Development Mechanism Validation and Verification Manual version 01.2^[2], issued by CDM Executive Board at its 55th meeting on 30/07/2010.

3.2 Document Review

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 24/07/2012 and VCS-PD version 03 dated 24/07/2012 submitted to the Bureau Veritas Certification. 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.

In addition to the monitoring documentation provided by the project participants, Bureau Veritas Certification reviews:

- a) The PD of the Project, the registered CDM-PDD, including the monitoring plan and the corresponding validation report^{[4] [12]},
- b) The applied monitoring methodology^[1],
- c) Other information and references relevant to the project activity's resulting emission reductions (e.g. national regulations)^{[23] [24]}.

3.3 Interviews

On 06/06/2012, 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 Hebei Construction Investment New Energy Co., Ltd. were interviewed.

Table 3 Interview topics

Interviewed organization	Interview topics
Hebei Construction Investment New Energy Co., Ltd.	↪ Project Design and implementation ↪ Technical equipment, calibration and operation ↪ Monitoring Plan and management procedures ↪ Data uncertainty and residual risks (QA/QC) ↪ Environmental Impacts ↪ Compliance with National Laws and Regulations ↪ Monitored data and Monitoring Report ↪ GHG Calculation

3.4 Site Inspections

Please refer to section 3.3 above.

3.5 Resolution of Any Material Discrepancy

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

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

Corrective Action Requests (CARs) are issued, where:

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

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

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

To guarantee the transparency of the verification process, the issues raised are documented in more details below.

Table 4 Resolution of Corrective Action /Clarification / Forward Action Requests

Draft report clarifications and corrective action requests by verification team	Document Ref.	Summary of project owner response	Verification team conclusion
CAR-1 The accreditation certification of the calibration entity “North China Electric Power Research Institute” is not available.	MR 3.2	The accreditation certificate of “North China Electric Power Research Institute” has been submitted.	North China Electric Power Research Institute has the accreditation certificate CNAS L0394 with the valid period from 12/05/2003 to 28/06/2014, latest renewal on 29/06/2011, which can cover the verification period. Thus, CAR-1 can be closed.
CAR-2 The meter reading during 01/09/2010~30/09/2010 is found inconsistent with the monthly reading record. The sales receipts from June 2010 to August 2010 have not been submitted for crosscheck.	MR ER	The meter reading during 01/09/2010~30/09/2010 is indicated wrongly due to a typo error. Correct value has been listed. The sales receipts from June 2010 to August 2010 have been provided.	The meter reading during 01/09/2010~30/09/2010 has been listed in accordance with the monthly reading record, which is also found consistent with the value in the sales receipt issued by the grid company. The sales receipts from June 2010 to August 2010 have been submitted, which are found consistent with corresponding monthly reading records. Thus, CAR-2 can be closed.
CL-1 Commercially sensitive information has been excluded from the public version project description.	PD 1.13	It is a typo error. No information has been excluded from the public version of the project description as the information is considered as commercially sensitive information. The description in relevant section of the PD has been improved.	No commercial sensitive information has been excluded to the public. Thus, CL-1 can be closed.
CL-2 The total number of crediting years has not been indicated in the VCS MR.	MR 1.6	The total number of years of the crediting period is 1 year and 113 days. VCS MR has been revised.	Considering the verification period under VCS 25/05/2010 to 14/09/2011, the total number of years of the crediting period has been indicated

Draft report clarifications and corrective action requests by verification team	Document Ref.	Summary of project owner response	Verification team conclusion
			correctly. Thus, CL-2 can be closed.
CL-3 The measurement methods and procedures to be applied are required to be described in more detail for the monitored parameters.	MR 3.2	Description to measurement methods and procedures has been improved.	The measurement methods and procedures have been described in accordance with the monitoring plan in the registered CDM PDD. Thus, CL-3 can be closed.
CL-4 Organization structure and responsibilities of personnel and emergency procedures are not fully consistent with the monitoring plan in the registered CDM PDD.	MR 3.3	Organization structure and responsibilities of personnel and emergency procedures have been revised in line with relevant section in the registered CDM PDD.	Organization structure and responsibilities of personnel and emergency procedures have been described in accordance with the monitoring plan in the registered CDM PDD. Thus, CL-4 can be closed.

4 VERIFICATION FINDINGS

4.1 Project Implementation Status

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 NCPG according to the signed Power Purchase Agreement (PPA) ^[15]. 133 sets of WTGs (Model type: FD77B ^[18]) with a unit capacity of 1.5MW, providing a total installed capacity of 199.5MW as described in the registered CDM PDD have been in operation.

According to the operation log of the Project ^[16], the Project has been commissioning since 25/05/2010, which has been defined as the Project Start Date of the Project.

During the validation stage of the Project, no remaining issues were left. No verification of the Project under CDM has been performed.

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 VCS-PD, VCS-MR and registered CDM-PDD 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 VCS-PD and CDM-PDD. Further analysis of monitored parameters as reported in the monitoring report compared to those estimated in the CDM-PDD is developed in section 4.2 of this report.

[Power System]

As is shown in the diagram of the power connection system ^[17], the electricity generated by the project is transmitted to on-site 35kV/220kV transformers which boost the voltage to 220 kV, and then delivered to Xiaochang Substation by 220kV transmission line. The electricity generated by the project is finally delivered to NCPG.

[Metering System]

There are three meters installed for the Project.

- The main meter (M1) has been installed on the high-voltage side of onsite 35kV/220kV transformers to measure the electricity exported to and imported from the grid by the Project.
- The backup meter (M2) has also been installed on the high-voltage side of onsite 35kV/220kV transformers (in parallel to M1) to measure the electricity exported to and imported from the grid by the Project.
- The meter (M3) has been installed on the backup line to measure the electricity delivered to the project through the backup line.

4.2 Accuracy of GHG Emission Reduction or Removal Calculations

Monitoring has been carried out in accordance with the monitoring plan contained in the VCS-PD ^[8] and the registered CDM-PDD ^[4].

[Parameters and information flow]

The parameters required by the 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:

$EG_{\text{facility},y}$, net electricity supplied to the grid by the Project

$EG_{\text{export},y}$, electricity exported to the grid by the Project

$EG_{\text{import},y}$, electricity imported from the grid to the Project

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

The quantity of net electricity supplied to the grid by the Project is the electricity exported to the grid by the Project ($EG_{\text{export},y}$) minus the electricity imported from the grid to the Project ($EG_{\text{import},y}$) and the electricity delivered to the project through the backup line ($EG_{\text{backupline},y}$). Therefore $EG_{\text{facility},y}$ can be calculated as below:

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

As described above, the meters have been installed in accordance with the registered CDM PDD. 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 are continuously monitored and monthly recorded by the PP and the grid company. 24:00 o'clock on the last day each month is the cut-off time to calculate the monthly quantity of net electricity supplied to the grid by the Project. The grid company provided the PP with the sales receipts monthly, which contain the electricity exported to the grid by the Project, electricity imported from the grid to the Project and the electricity delivered to the project through the backup line. For the period 25/05/2010~31/05/2010 and 01/09/2011~14/09/2011, separate sales receipts are issued by the grid company.

The verification team has verified the values provided in the monitoring report and ER spreadsheet against the relevant documented evidences i.e. the Monthly Reading Records (MRRs)^[25] and the sales receipts^[26] and found them to be consistent with the evidences. The MRRs and the sales receipts can cover this monitoring period from 25/05/2010 to 14/09/2011.

Parameters determined ex-ante:

$EF_{\text{grid,CM},y}$, baseline emission factor

The baseline emission factor of the crediting period of the Project has been determined ex-ante in the registered CDM PDD^[4] and VCS-PD^[8]. The emission factor of 1.05485 tCO₂e/MWh used in the monitoring period has been verified against the registered PDD and found consistent.

[Calibration]

During this monitoring period, the installed metering equipments have been operating well and were duly calibrated. The calibration records are shown in the table below.

Table 5 Calibration records of the meters

Meter ID	Serial number	Accuracy	Calibration date	Calibration entity	Calibration validity
M1	37006406	0.2S	17/12/2009	A	Yes
			13/12/2010	B	
M2	37006391	0.2S	17/12/2009	A	Yes
			13/12/2010	B	
M3	B24T0P812403 001807	0.5S	11/04/2010; 13/12/2010;	B	Yes

Calibration Entity A: North China Electric Power Research Institute with accreditation certificate CNAS L0394 with the valid period from 12/05/2003 to 28/06/2014, latest renewal on 29/06/2011^[21]

Calibration Entity B: Electric Energy Measurement Centre of Zhangjiakou Power Supply Company with accreditation certificate (Ji) Fa Ji [2008] No.D011 with the valid period from 18/02/2008 to 17/02/2011 and approved extension of validity till 31/12/2011^[22]

The monitoring plan of the registered PDD requires that the accuracy of the metering equipments shall not be less than 0.5S and the metering equipments will be calibrated annually by an independent third party according to relevant national standard to ensure its accuracy.

The verification team 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)^[23]. The calibration frequency fulfils the requirement as described in the monitoring plan and is in compliance with the national standard Verification Regulation of Electrical Energy Meter with Electronics (JJG 596-1999)^[24].

4.3 Quality of Evidence to Determine GHG Emission Reductions or Removals

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 are maintained in the identified records. All the data are in compliance with that stated in the Monitoring Report version 03.

As per the methodology ACM0002 Version 12.1.0^[1] and the VCS-PD^[8], 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 reductions factor times the net electricity supplied to the grid. Therefore,

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

$EF_{\text{grid, CM, y}}$: GHG emission factor of the NCPG, calculated ex ante in the registered CDM-PDD and VCS-PD as 1.05485 tCO₂e/MWh

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

The net electricity supplied to the grid by the Project ($EG_{\text{facility, y}}$) can be calculated as:

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

The verification team has cross-checked the values from the MRRs^[25] with the sales receipts^[26] for the period from 25/05/2010 to 14/09/2011. The conservative values are used for emission reductions calculation. The verified values are shown in the following tables.

Table 6 The verified electricity exported to the grid by the Project ($EG_{\text{export},y}$, MWh)¹

Period	$EG_{\text{export},y}$		
	MRRs	Sales Receipt	Verified Value
	A	B	C=Min(A,B)
25/05/2010-31/05/2010	1617.550	1617.550	1617.550
01/06/2010-30/06/2010	4422.000	4422.000	4422.000
01/07/2010-31/07/2010	4585.900	4585.900	4585.900
01/08/2010-31/08/2010	3676.200	3676.200	3676.200
01/09/2010-30/09/2010	14281.025	14281.025	14281.025
01/10/2010-31/10/2010	26952.750	26952.750	26952.750
01/11/2010-30/11/2010	52418.025	52418.025	52418.025
01/12/2010-31/12/2010	69529.075	69529.075	69529.075
Subtotal 2010	-		177482.525
01/01/2011-31/01/2011	54115.050	54115.050	54115.050
01/02/2011-28/02/2011	27378.725	27378.725	27378.725
01/03/2011-31/03/2011	60688.375	60688.375	60688.375
01/04/2011-30/04/2011	47164.425	47164.425	47164.425
01/05/2011-31/05/2011	57783.825	57783.825	57783.825
01/06/2011-30/06/2011	23032.625	23032.625	23032.625
01/07/2011-31/07/2011	16106.750	16106.750	16106.750
01/08/2011-31/08/2011	21584.200	21584.200	21584.200
01/09/2011-14/09/2011	8305.275	8305.275	8305.275
Subtotal 2011	-		316159.250
Total of the verification period	-		493641.775

¹ For the period 25/05/2010~31/05/2010 and 01/09/2011~14/09/2011, separate sales receipts are issued by the grid company.

Table 7 The verified electricity imported from the grid to the Project ($EG_{import,y}$, MWh) and electricity delivered to the project through the backup line ($EG_{backupline,y}$, MWh)²

Period	$EG_{import,y}$			$EG_{backupline,y}$		
	MRRs	Sales Receipt	Verified Value	MRRs	Sales Receipt	Verified Value
	D	E	F=Max(D,E)	G	H	I=Max(G,H)
25/05/2010-31/05/2010	3.025	3.025	3.025	0.000	0.000	0.000
01/06/2010-30/06/2010	4.400	4.400	4.400	0.000	0.000	0.000
01/07/2010-31/07/2010	2.200	2.200	2.200	0.000	0.000	0.000
01/08/2010-31/08/2010	30.525	30.525	30.525	0.000	0.000	0.000
01/09/2010-30/09/2010	53.900	53.900	53.900	3.500	3.500	3.500
01/10/2010-31/10/2010	61.050	61.050	61.050	0.000	0.000	0.000
01/11/2010-30/11/2010	5.500	5.500	5.500	0.000	0.000	0.000
01/12/2010-31/12/2010	0.000	0.000	0.000	0.000	0.000	0.000
Subtotal 2010	-		160.600	-		3.500
01/01/2011-31/01/2011	10.725	10.725	10.725	0.000	0.000	0.000
01/02/2011-28/02/2011	29.150	29.150	29.150	0.000	0.000	0.000
01/03/2011-31/03/2011	7.150	7.150	7.150	0.000	0.000	0.000
01/04/2011-30/04/2011	37.125	37.125	37.125	4.020	4.020	4.020
01/05/2011-31/05/2011	12.650	12.650	12.650	0.000	0.000	0.000
01/06/2011-30/06/2011	51.975	51.975	51.975	0.000	0.000	0.000
01/07/2011-31/07/2011	50.325	50.325	50.325	0.000	0.000	0.000
01/08/2011-31/08/2011	65.175	65.175	65.175	0.000	0.000	0.000
01/09/2011-14/09/2011	17.875	17.875	17.875	0.000	0.000	0.000
Subtotal 2010	-		282.150	-		4.020
Total of the verification period	-		442.750	-		7.520

Table 8 The verified net electricity supplied to the grid by the Project (MWh)

Period	$EG_{export,y}$	$EG_{import,y}$	$EG_{backupline,y}$	$EG_{facility,y}$
	C	F	I	J=C-F-I
25/05/2010~31/12/2010	177,482.525	160.600	3.500	177,318.425
01/01/2011~14/09/2011	316,159.250	282.150	4.020	315,873.080
Total of this verification period	493,641.775	442.750	7.520	493,191.505

² For the period 25/05/2010~31/05/2010 and 01/09/2011~14/09/2011, separate sales receipts are issued by the grid company

Table 9 The baseline emissions of the Project

Period	EG _{facility,y} (MWh)	Emission Factor (tCO ₂ e/MWh)	Baseline Emissions (tCO ₂ e)
	J	K	L=J*K
25/05/2010~31/12/2010	177,318.425	1.05485	187,044
01/01/2011~14/09/2011	315,873.080		333,198
Total	493,191.505		520,242

[Project emissions]

As per the methodology ACM0002 Version 12.1.0, for the windfarm project, the project emission is zero.

[Leakage emissions]

No leakage needs to be considered according to ACM0002 Version 12.1.0.

[Emission reductions]

Therefore, the emission reductions during the monitoring period from 25/05/2010 to 14/09/2011 are calculated as:

Table 10 Emission reductions of the Project

Monitoring Period	Period	BE (tCO ₂ e)	PE (tCO ₂ e)	Emission reductions (tCO ₂ e)
25/05/2010 to 14/09/2011	25/05/2010~31/12/2010	187,044	0	187,044
	01/01/2011~14/09/2011	333,198	0	333,198
Total		520,242	0	520,242

As per ex-ante calculation of the registered CDM-PDD, the average of annual emission reductions is 427,936tCO₂e. The estimated ERs during this period are 560,420tCO₂e (=427,936*478/365), whereas the actual emission reduction accomplished by the project during this verification period is 520,242 tCO₂e. Comparing with the estimated ERs, the actual ERs were lower than estimation.

4.4 Management and Operational System

The data reporting procedure between the Project and the grid company has been identified and assessed during the on-site visit. In order to ensure the completeness of the records of the meters, the PP had taken the effective actions including the installation, adjustment, calibration and continual monitoring for the meters.

The PP has operated the Project as per VCS-PD and the registered CDM-PDD. The monitoring organization has been set up, all monitoring staffs have been trained and quality control procedures are in place ^{[19][28]}. Reading records of all meters are based on continuous measurement and are monthly

recorded by the PP and the grid company. The grid company issues monthly sales and purchase receipts to confirm the net electricity supplied to the grid.

5 VERIFICATION CONCLUSION

Bureau Veritas Certification has performed the verification of Hebei Guyuan County Dongxinying 199.5 MW Wind Power Project, CDM Registration Reference Number 4853, owned by Hebei Construction Investment New Energy Co., Ltd., which is located in the south of Guyuan County, Zhangjiakou City, Hebei Province, P.R.China, and applying the methodology ACM0002 Version 12.1.0. The verification was performed based on the requirements set by VCS Standard Version 3.2 effective as the 01/02/2012, UNFCCC criteria for the CDM and relevant guidance provided by CMP and the CDM Executive Board.

The verification consisted of the following three phases: i) desk review of the project design and the baseline and monitoring plan; ii) follow-up interviews with project stakeholders and onsite visit; 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 project Monitoring Plan 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 03 dated 24/07/2012 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. The Project also conforms to the verification criteria for projects and their GHG emission reductions or removals set out in the VCS rules.

Bureau Veritas Certification can confirm that the GHG emission reductions are calculated without material misstatements. Our opinion relates to the projects' GHG emission 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: **25/05/2010 to 14/09/2011**

Reporting period	Baseline emissions (tCO ₂ e)	Project emissions (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Emission Reductions (tCO ₂ e)
25/05/2010~31/12/2010	187,044	0	0	187,044
01/01/2011~14/09/2011	333,198	0	0	333,198
Total	520,242	0	0	520,242

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Documents reviewed:

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Persons interviewed:

/1/	Mr. Du Guang	CDM Manager of the PP
/2/	Mr. Xu Kun	Site Operator of the PP

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