
VERIFICATION REPORT AND CERTIFICATION STATEMENT

**Construction Investment Yanshan (Guyuan)
Wind Energy Co., Ltd.**

**Guyuan Wuhuaping 49.5 MW Wind
Power Project**

Monitoring period from 01/12/2009 to 30/06/2010

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Date of Issue:		Project Number:	
22-12-2010		CCP.VOL0776	
Project Title:			
Guyuan Wuhuaping 49.5 MW Wind Power Project			
Organisation:		Client:	
SGS United Kingdom Limited		Construction Investment Yanshan (Guyuan) Wind Energy Co., Ltd.	
Publication of Monitoring Report:			
Monitoring Period:		From 01/12/2009 to 30/06/2010	
First Monitoring Report Version and Date:		Version 01, 21/09/2010	
Final Monitoring Report Version and Date:		Version 01.1, 01/12/2010	
Summary:			
SGS United Kingdom Ltd has performed the verification of the VCS 2007.1 project Guyuan Wuhuaping 49.5 MW Wind Power Project (UNFCCC Ref. No. 3356 & SGS Ref. No CCP.VOL0776). The verification includes confirming the implementation of the monitoring plan of the registered CDM PDD Version 03 dated 17/12/2009, and the application of the monitoring methodology as per ACM0002 version 10, dated 11/06/2009. A site visit was conducted to verify the data submitted in the monitoring report. Guyuan Wuhuaping 49.5 MW Wind Power Project utilizes wind to generate electricity. The total installed capacity of the Project is 49.5 MW equipped with 33 sets of wind turbines with a unit capacity of 1,500 kW. Electricity generated by the Project will be delivered to North China Grid. The project reduces greenhouse gas emissions by replacing equivalent amount of electricity that would have otherwise been generated by operation of power plants connected to North China Grid and by addition of new generation sources connected to North China Grid in the absence of the project activity. SGS confirms that the project is implemented in accordance with the registered PDD. The monitoring system is in place and the emission reductions are calculated without material misstatements. Our opinion relates to the projects GHG emissions and the resulting GHG emission reductions reported and related to the valid and validated project baseline and monitoring and its associated documents. Based on the information seen and evaluated we confirm that the implementation of the project has resulted in 86,949 tCO₂e Emission Reductions during period 01/12/2009 up to 30/06/2010.			
Subject:			
VCS 2007.1 Project Verification			
Verification Team:			
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Technical Review:	Trainee Technical Reviewer:		
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Name: Siddharth Yadav Date: 9 th February 2011			
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2	-	-	

Abbreviations

AFOLU	Agriculture, Forestry and Other Land Use
CAR	Corrective Action Request
CDM	Clean Development Mechanism
CL	Clarification Request
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
DNA	Designated National Authority
DOE	Designated Operational Entity
EF	Carbon Emission Factor
FAR	Forward Action Request
GHG	Greenhouse Gas(es)
GWP	Global Warming Potential
IPCC	Intergovernmental Panel on Climate Change
MP	Monitoring Plan
MPRs	Monthly Production Reports
MR	Monitoring Report
NCG	North China Grid
PP	Project Participant
SGS	SGS United Kingdom Ltd.
UNFCCC	United Nations Framework Convention on Climate Change
VCS	Voluntary Carbon Standard
VCS PD	VCS Project Description
VCUs	Voluntary Carbon Units
VVM	Validation and Verification Manual

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1. Introduction

1.1 Objective

SGS United Kingdom Ltd has been contracted by Construction Investment Yanshan (Guyuan) Wind Energy Co., Ltd. to perform an independent verification of its VCS project Guyuan Wuhuaping 49.5 MW Wind Power Project. The verifiers have reviewed the GHG data collected to date for the period between 01/12/2009 to 30/06/2010.

The purposes of this verification exercise are, by review of objective evidence, to independently review:

- Whether the project has resulted in emission reductions as declared by the organisation or GHG project's GHG assertion;
- The data reported are accurate, complete, consistent, transparent and free of material error or omission.

1.2 Scope and Criteria

This engagement covers verification of emission reductions from anthropogenic sources of greenhouse gases included within the project boundary of Guyuan Wuhuaping 49.5 MW Wind Power Project.

Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. Our examination includes assessment, on a test basis, of evidence relevant to the amounts and disclosures in relation to the project's GHG emission reductions for the defined reporting period.

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

1.3 VCS project Description

Guyuan Wuhuaping 49.5 MW Wind Power Project utilizes wind to generate electricity. The total installed capacity of the Project is 49.5 MW equipped with 33 sets of wind turbines with a unit capacity of 1,500 kW. Electricity generated by the Project will be delivered to North China Grid. The project reduces greenhouse gas emissions by replacing equivalent amount of electricity that would have otherwise been generated by operation of power plants connected to North China Grid and by addition of new generation sources connected to North China Grid in the absence of the project activity.

1.4 Level of assurance

The level of assurance of the verification report is reasonable assurance engagements as selected by the Client. Materiality for the project is 5%.

1.5 Project Activity and Period Covered

This engagement covers emissions and emission reductions from anthropogenic sources of greenhouse gases included within the project boundary of the following project and period.

Title of Project Activity:	Guyuan Wuhuaping 49.5 MW Wind Power Project
SGS Reference No:	CCP.VOL0776
Monitoring Period Covered in this Report	From 01/12/2009 to 30/06/2010
Project Owner	Construction Investment Yanshan (Guyuan) Wind Energy Co., Ltd.
Location of the Project Activity:	Guyuan County, Zhangjiakou City, Hebei Province, People's Republic of China

2. Methodology

2.1 General Approach

SGS's approach to the verification is a two-stage process.

In the first stage, SGS completed a strategic review and risk assessment of the projects activities and processes in order to gain a full understanding of:

- Activities associated with all the sources contributing to the project emissions and emission reductions, including leakage if relevant;
- Protocols used to estimate or measure GHG emissions from these sources;
- Collection and handling of data;
- Controls on the collection and handling of data;
- Means of verifying reported data; and
- Compilation of the monitoring report.

At the end of this stage, SGS produced a Verification Checklist which, based on the risk assessment of the parameters and data collection and handling processes for each of those parameters, describes the verification approach and the sampling plan.

Using the Verification checklist, SGS verified the implementation of the monitoring plan and the data presented in the Monitoring Report for the period in question. This involved a site visit and a desk review of the monitoring report. This verification report describes the findings of this assessment.

2.2 Verification Team for this Assessment

Name	Role
Niclo Deng Wei	Lead Assessor/Team Leader
Yuan Xue	Assessor
Jack Xing Jiang	Local Assessor/Sectoral Expert

TR for this Assessment

Name	Role
Elton Chen	TR
Shute Li	Sectoral Expert

2.3 Means of Verification

2.3.1 Review of Documentation

The registered PDD, the monitoring report submitted by the client and additional background documents related to the project performance were reviewed. A complete list of all documents reviewed is attached in section 7 of this report.

2.3.2 Site Visits

As part of the verification, the following on-site inspections have been performed by members of the assessment team.

Location: Pingdingbu Town, Guyuan County, Zhangjiakou City, Hebei Province, People's Republic of China	
Date: 09/11/2010 – 10/11/2010	
Coverage:	Source of Information / Persons Interviewed
1. Site audit of the implementation and operation of the project activity, as well as the generation conditions as per the registered PDD.	Huang Hai, HECIC CDM office Wang Tao, HECIC New Energy Liang Yonghong, HECIC New Energy
2. Review of information flows for generating, aggregating and reporting the monitoring parameters;	Pan Tao, Additional Consulting & Engineering Gao Bin, Additional Consulting & Engineering
3. Interviews with local designated personnel to confirm that the operational and data collection procedures are implemented in accordance with the monitoring plan.	
4. Verification of the information provided in the monitoring report and data from other sources such as plant log books, monitoring records, ETNs and sales receipts.	
5. A check of the monitoring equipment including calibration performance and observations of monitoring practices against the requirements of the PDD and the selected methodology.	
6. Review of calculations and assumptions made in determining the GHG data and emission reductions.	
7. Identification of quality control and quality assurance procedures in place to prevent or identify and correct any errors or omissions in the reported monitoring parameters.	

2.4 Reporting of Findings

As an outcome of the verification process, the team can raise different types of findings

In general, where insufficient or inaccurate information is available and clarification or new information is required the team shall raise a Clarification Request (CL) specifying what additional information is required.

Where a non-conformance arises the team shall raise a Corrective Action Request (CAR). A CAR is issued, where:

- I. the verification is not able to obtain sufficient evidence for the reported emission reductions or part of the reported emission reductions. In this case these emission reductions shall not be verified and certified;
- II. the verification has identified misstatements in the reported emission reductions. Emission reductions with misstatements shall be discounted based on the verifiers ex-post determination of the achieved emission reductions

The verification process may be halted until this information has been made available to the assessors' satisfaction. Failure to address a CL may result in a CAR. Information or clarifications provided as a result of a CL may also lead to a CAR.

FARs may be raised which are for the benefit of future projects and future verification actors. These have no impact upon the completion of the verification activity.

Corrective Action Requests and Clarification Requests are detailed in Verification Checklist. The Project Developer is given the opportunity to "close" outstanding CARs and respond to CLs and FARs.

2.5 Internal Quality Control

Following the completion of the assessment process and a recommendation by the Assessment Team, all documentation will be forwarded to a Technical Reviewer. The task of the Technical Reviewer is to check that all procedures have been followed and all conclusions are justified. The Technical Reviewer will either accept or reject the recommendation made by the assessment team.

3. Verification Findings

3.1 Project Documentation and Compliance with the registered PDD and VCS PD

Based on the project information available on the UNFCCC website, <http://cdm.unfccc.int/Projects/DB/BVQI1265358035.51/view>, the project was registered as CDM project activity on 03/07/2010 and the first crediting period for the project is from 03/07/2010 to 02/07/2017. This is VCS verification for the project covering the period from 01/12/2009 to 30/06/2010. The end date of this monitoring period is 30/06/2010 before the starting date of CDM crediting period.

The project was registered against the approved consolidated methodology ACM0002 version 10 dated 11/06/2009 (/1/). It is confirmed through document review (/13/) and on-site visit that the 33 wind turbines with unit capacity of 1,500 kW and other supplementary facilities and equipments have been installed and operated well during the monitoring period. The start date of construction is in 10/05/2009 and the start date of commission is 30/10/2009. The project boundary is consistent with the registered PDD (/2//13/). No fossil fuels were used for power generation by the project during this monitoring period as verified through onsite visit and interview with the project participant.

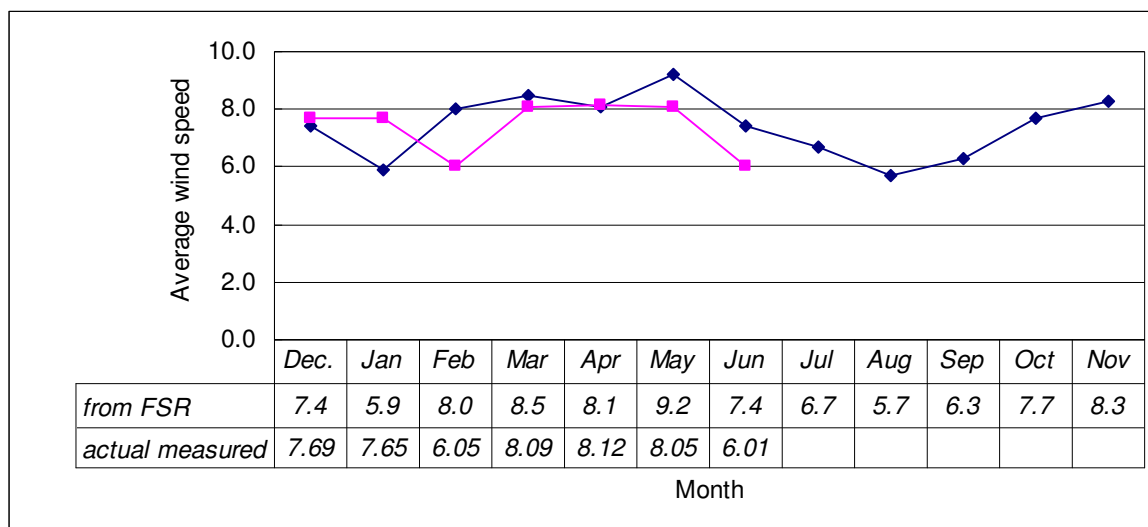
Management and operational system is in place. QA/QC procedures stipulated in the registered PDD have been followed. Emergency plan was in place. The staffs were well trained and qualified.

The emission reduction was 71,816 tCO₂e (=123,645 tCO₂e *212Days /365Days) for the period 01/12/2009 to 30/06/2010 as per the estimation made in the registered PDD. The actual emission reduction has been verified as 86,949 tCO₂e for the same period, which is 21.07% higher than the estimated value in registered PDD for the same period. According to EB48_Annex68 "Guidelines on Completeness Check of Request for Issuance", Monitoring Report shall contain comparison of the actual emission reduction claimed in the monitoring period with the estimate in the registered PDD, and explanation on any significant increase. CL #2 is raised requesting the PP to further clarify and justify the significant increase with corresponding evidences.

It has been confirmed by checking the FSR that the annual power generation in the registered PDD quoted from FSR was estimated based on the wind resource cross a representative year and the wind energy resources varies from month to month. For the period from Dec to Jun, the monthly average wind speed is higher than annual average therefore the wind resources, energy utilizable for power generation and achieved emission reductions from Dec to Jun is higher than calculated values based on the registered PDD using above method that treat the daily wind resources/power generation/emission reductions as uniform.

Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Average
wind speed (m/s)	5.9	8.0	8.5	8.1	9.2	7.4	6.7	5.7	6.3	7.7	8.3	7.4	7.4

Furthermore, actual wind speed was also used to check the consistency of data during historical representative year and this monitoring period. The following diagram shows the comparison of average wind speed during historical representative year and this monitoring period.



It is verified by the assessment team that the variation of monthly average wind speed actually measured is consistent with that described in FSR. This monitoring period from 01/12/2009 to 30/06/2010 covers the months with wind speed higher than the average level, which can well explain the reason of increasing emission reduction than the estimated value in registered PDD. Therefore, CL #2 is closed.

3.2 Monitoring Results

According to the monitoring plan of the registered PDD, the parameters need to be monitored are $EG_{PJ,y}$ (The quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the Project in year y), $EG_{PJtoGRID,y}$ (The electricity delivered by the Project to the grid in year y) and $EG_{GRIDtoPJ,y}$ (The electricity imported by the Project from the grid in year y).

In accordance with the monitoring plan, the parameter $EG_{PJ,y}$ is calculated as: $EG_{PJ,y} = EG_{PJtoGRID,y} - EG_{GRIDtoPJ,y}$.

$EG_{PJtoGRID,y}$ (the electricity delivered by the Project to the grid) and $EG_{GRIDtoPJ,y}$ (the electricity imported by the Project from the grid) are continuously measured by a bidirectional meter installed at the main transmission line. Designated personnel of the wind farm read the meter readings and recorded in Daily Reading Records (DRRs). Accumulated data were transcribed into Monthly Production Reports (MPRs) on a monthly basis.

The monthly cut-off time for electricity delivered by the project to the grid and electricity imported by the project from the grid is 24:00 of the last day of each month. The grid company issued Electricity Transaction Notes (ETNs) to the project owner to confirm the values on a monthly basis. ETNs serving as the sales receipts were archived by the project owner for cross checking.

According to monitoring plan in the registered PDD, if there is difference between the monitored data and the data on receipts, the conservative values will be used to estimate emission reductions.

The reported monthly meter readings in MR have been checked against the MPRs and the consistency has been confirmed. According to paragraph 208, VVM version 1.2, information provided in the monitoring report should be cross-checked with other sources. CL #3 was raised requesting PP to provide the sales receipts of electricity imported by the project from the grid. The sales receipts provided by PP has been double checked and it has been confirmed that the larger values of $EG_{PJtoGRID,y}$ and smaller values of $EG_{GRIDtoPJ,y}$ were adopted for ERs calculation. This is conservative in accordance with the monitoring plan. CL #3 is closed.

Data in the Daily Reading Records (DRRs) (/7/) and the logbooks of wind turbine generation (/9/) were checked for cross reference.

The accuracy of the meters involved in this project activity is in accordance with Chinese electric industry regulation (DL/T448-2000) and the meter is calibrated annually by accredited entities (/6/) in accordance with the monitoring plan. Calibration certificates of the meters involved in this project (/5/) have been provided for verification.

Detailed calibration information of the meters is as below:

parameter	Location	S/N	Accuracy	Calibration date
EG _{PJtoGRID,y} EG _{GRIDtoPJ,y}	Installed on the main transmission line	09070111440073	0.2S	15/09/2009
The calibration was implemented by North China Grid Company Limited Zhangjiakou Power supply Co., Ltd, which is accredited by Hebei Province Quality Technology Surveillance Bureau (accreditation certification No. (Ji) Faji (2008) D011).				

There were no fossil fuels used for electricity generation by the project activity during this monitoring period.

Supporting references and data required to determine the quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the Project is found to be complete and transparent.

3.3 Remaining Issues, CAR's, CL's from Previous Validation or Verification

This is the VCS verification against VCS 2007.1 for the project. There are no remaining issues from previous validation.

Please refer to <http://cdm.unfccc.int/Projects/DB/BVQI1265358035.51/view>

3.4 Project Implementation

Project was implemented and equipments were installed as described in the monitoring plan of registered PDD.

3.5 Completeness of Monitoring

The reporting procedures reflect the content of the monitoring plan. The monitoring mechanism is effective and reliable.

3.6 Accuracy of Emission Reduction Calculations

The calculation of emission reductions is found to be correct. The details of the reported and the verified values for all parameters are listed in section 4.

3.7 Quality of Evidence to Determine Emission Reductions

Critical parameters used for the determination of the Emission Reductions are discussed above in section 3.2 above. All the data recorded is in compliance with the monitoring report.

3.8 Management and Operational System and Quality Assurance

Management system and quality assurance procedures have been stipulated in the CDM Manual and have been implemented. Emergency plan (/14/) and staff training plan are in place. The staffs are well trained and qualified (/12/). These have been verified during on-site visit and document review. Therefore, we can confirm that the management system of the project is in place; with the responsibilities properly identified and in place, and that QA/QC procedures are well implemented.

3.9 Data from External Sources

The baseline emission factor (EF_y) was determined ex-ante and fixed for the first crediting period as per the registered PDD Version 03 dated 17/12/2009. The value of the baseline emission factor used in the monitoring report version 1.1 dated 01/12/2010 is 1.05485 tCO₂e/MWh. It complies with the calculated value of the baseline emission factor in the registered PDD Version 03 dated 17/12/2009.

In the monitoring plan of the registered PDD dated 17/12/2009, the monitoring of electricity imported from the grid via the 10kV backup line was not specified, whereas it is found by the assessment team through on-site visit that a 10kV back up line was installed at the project site to import the electricity from the grid in emergency. SGS assessment team raised CAR #1 requiring the PP to include information about the backup line in the Monitoring Report and ER spreadsheet following completeness principle.

The information about the 10kV backup line has been included in the Monitoring Report version 01.1 dated 01/12/2010. According to clarification letter provided by the grid company, it is able for the assessment team to confirm that there is no electricity imported through this backup line during this monitoring period hence there is no impact to the emission reduction calculation. Therefore, the CAR #1 was closed.

4. Calculation of Emission Reductions

Table 1 Reported and Verified Data of electricity delivered by the Project to the grid (EG_{PJtoGRID,y})

Period	Reported value(MWh) in monitoring report version 01.1			Verified value(MWh)		
	From meter reading(MWh)	From sales receipt (MWh)	Value used for ER calculation (MWh)	From meter reading(MWh)	From sales receipt (MWh)	Value used for ER calculation (MWh)
01/12/2009- 31/12/2009	13,887.720	13,836.805	13,836.805	13,887.720	13,836.805	13,836.805
subtotal	13,887.720	13,836.805	13,836.805	13,887.720	13,836.805	13,836.805
01/01/2010- 31/01/2010	12,080.640	12,028.895	12,028.895	12,080.640	12,028.895	12,028.895
01/02/2010- 28/02/2010	9,287.520	9,226.254	9,226.254	9,287.520	9,226.254	9,226.254
01/03/2010- 31/03/2010	13,717.440	13,678.267	13,678.267	13,717.440	13,678.267	13,678.267
01/04/2010- 30/04/2010	14,596.560	14,531.232	14,531.232	14,596.560	14,531.232	14,531.232
01/05/2010- 31/05/2010	12,695.760	12,635.288	12,635.288	12,695.760	12,635.288	12,635.288
01/06/2010- 30/06/2010	6,646.200	6,614.505	6,614.505	6,646.200	6,614.505	6,614.505
subtotal	69,024.120	68,714.441	68,714.441	69,024.120	68,714.441	68,714.441
Total	82,911.840	82,551.246	82,551.246	82,911.840	82,551.246	82,551.246

Table 2 Reported and verified electricity imported by the Project from the grid (EG_{GRIDtoPJ,y})

Period	Reported value(MWh) in monitoring report version 01.1			Verified value(MWh)		
	From meter reading(MWh)	From sales receipt (MWh)	Value used for ER calculation (MWh)	From meter reading(MWh)	From sales receipt (MWh)	Value used for ER calculation (MWh)
01/12/2009- 31/12/2009	10.560	6.034	10.560	10.560	6.034	10.560
subtotal	10.560	6.034	10.560	10.560	6.034	10.560
01/01/2010- 31/01/2010	31.680	26.730	31.680	31.680	26.730	31.680
01/02/2010- 28/02/2010	25.080	20.621	25.080	25.080	20.621	25.080
01/03/2010- 31/03/2010	10.560	7.680	10.560	10.560	7.680	10.560
01/04/2010- 30/04/2010	7.920	6.092	7.920	7.920	6.092	7.920
01/05/2010- 31/05/2010	10.560	8.448	10.560	10.560	8.448	10.560
01/06/2010- 30/06/2010	26.400	23.294	26.400	26.400	23.294	26.400

Period	Reported value(MWh) in monitoring report version 01.1			Verified value(MWh)		
	From meter reading(MWh)	From sales receipt (MWh)	Value used for ER calculation (MWh)	From meter reading(MWh)	From sales receipt (MWh)	Value used for ER calculation (MWh)
subtotal	112.200	92.865	112.200	112.200	92.865	112.200
Total	122.760	98.899	122.760	122.760	98.899	122.760

Table 3 Reported and Verified Data of the quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the Project (EG_{PJ,y}) in 2009

Period	Reported Value in version 1.0 of the MR(MWh)	Verified Value(MWh)
	Net electricity supplied to the grid by the project	Net electricity supplied to the grid by the project
01/12/2009-31/12/2009	13,826.245	13,826.245
Total	13,826.245	13,826.245

Table 4 Reported and Verified Data of the quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the Project (EG_{PJ,y}) in 2010

Period	Reported Value in version 1.0 of the MR(MWh)	Verified Value(MWh)
	Net electricity supplied to the grid by the project	Net electricity supplied to the grid by the project
01/01/2010-30/06/2010	68,602.241	68,602.241
Total	68,602.241	68,602.241

Based on the verified values, calculation of the emission reductions is done below:

The quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the Project during the monitoring period from 01/12/2009 to 31/12/2009 is 13,826.245MWh;
The baseline emission factor (EF_y) is 1.05485 tCO₂e/MWh;

Baseline emissions (BE_y) for the monitoring period from 01/12/2009 to 31/12/2009 is

$$BE_y = EG_y \times EF_y = 13,826.245 \text{ MWh} \times 1.05485 \text{ tCO}_2\text{e/MWh} = 14,584 \text{ tCO}_2\text{e};$$

Project emissions (PE_y) is 0 tCO₂e;

Emission Reductions for the monitoring period from 01/12/2009 - 31/12/2009 (ER_y) is:

$$ER_y = BE_y - PE_y = 14,584 \text{ tCO}_2\text{e}$$

The quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the Project during the monitoring period from 01/01/2010 to 30/06/2010 is 68,602.241 MWh;
The baseline emission factor (EF_y) is 1.05485 tCO₂e/MWh;

Baseline emissions (BE_y) for the monitoring period from 01/01/2010 to 30/06/2010 is

$$BE_y = EG_y \times EF_y = 68,602.241 \text{ MWh} \times 1.05485 \text{ tCO}_2\text{e/MWh} = 72,365 \text{ tCO}_2\text{e};$$

Project emissions (PE_y) is 0 tCO₂e;

Emission Reductions for the monitoring period from 01/01/2010 to 30/06/2010 (ER_y) is:

$$ER_y = BE_y - PE_y = 72,365 \text{ tCO}_2\text{e}$$

Total Emission Reduction for the monitoring period from 01/12/2009 to 30/06/2010 (ER_y) is:

$$ER_{\text{total},y} = 14,584 \text{ tCO}_2\text{e} + 72,365 \text{ tCO}_2\text{e} = 86,949 \text{ tCO}_2\text{e}$$

5. Recommendations for Changes in the Monitoring Plan

No recommendation for changes in the monitoring plan was made during this verification.

6. VCU Certification Statement

The scope of the verification

We, SGS have been engaged by Construction Investment Yanshan (Guyuan) Wind Energy Co., Ltd. to certify that the greenhouse gas (GHG) emission reductions reported for Guyuan Wuhuaping 49.5 MW Wind Power Project for the period from 01/12/2009 to 30/06/2010 in the verification report and a monitoring report version 01.1 dated 01/12/2010 are eligible for registration as Voluntary Carbon Units.

This engagement covers the verification of emission reductions from anthropogenic sources of greenhouse gases included within the project boundary of the Guyuan Wuhuaping 49.5 MW Wind Power Project, as well as an additional confirmation of the compliance of the registered PDD with the requirements of VCS 2007.1.

Our approach is risk-based, drawing on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. Our examination includes assessment, on a test basis, of evidence relevant to the amounts and disclosures in relation to the project's GHG emission reductions for the defined reporting period.

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

Conclusions of the verification

(a) We are an entity accredited by the United Nations Framework Convention for Climate Change (UNFCCC) to undertake certification and verification services in the sector in which the Project is undertaken. The accreditation is accepted by VCS Board as indicated in Clause 9 of VCS 2007.1.

(b) The monitoring report, together with other information examined, was prepared in full substance and form as required by the Voluntary Carbon Standard version 2007.1, published by the Climate Group as approved by the Voluntary Carbon Standard Steering Committee on 18/11/2008.

(c) The information in the Project's monitoring report together with other information examined by us, including all the information necessary for us to determine that the emission reductions achieved have been determined correctly.

(d) Based on our examination of the monitoring report and other relevant information, the Project meets all the requirements of the Voluntary Carbon Standard verification criteria contained in the VCS 2007.1.

(e) Based on our examination of the monitoring report and other relevant information, the claiming emission reductions during the monitoring period from 01/12/2009 to 30/06/2010 are verified as 86,949 tonnes CO₂ equivalent.

Liability statement with regards to the accuracy of the verification statement

The management of the project, Construction Investment Yanshan (Guyuan) Wind Energy Co., Ltd. is responsible for the preparation of the GHG emissions data and the reported GHG emissions reductions. SGS is responsible for verification and confirming emission reductions for the project, as described in the monitoring report.

Our certification approach draws on an understanding of the risks associated with reporting GHG emissions data and the controls in place to mitigate these. Our examination includes an assessment of evidence, through desk review, and where necessary, interviews, stakeholder discussions and site visits, relevant to certifying the rightfulness of the amounts and disclosures in relation to the Project's GHG emission reductions.

We planned and performed our work to obtain the information and explanations that we considered necessary to provide sufficient evidence for us to give reasonable assurance that the amount of GHG emission reductions for the given period, prepared on the basis of the monitoring report, are fairly stated.

This assessment included:

- Collection of evidence supporting the reported data
- Checking whether the provisions of the Monitoring Plan in the VCS PD, were consistently and appropriately applied

We have verified whether the information included in the monitoring report representing the emission reductions achieved has been determined correctly for the given period from the baseline figure.

Certification statements

Based on process and procedures conducted, in our opinion, the monitoring report Version 01.1 dated 01/12/2010 on emission reductions for Guyuan Wuhuaping 49.5 MW Wind Power Project during the reporting period from 01/12/2009 to 30/06/2010 is materially correct and is a fair representation of the GHG data and information and the emission reductions are fairly stated. All relevant facts have been found correct by our examination. The GHG emission reductions were calculated correctly on the basis of ACM0002 Version 10 dated 11/06/2009.

Therefore, SGS is able to certify that the project is in full compliance with the Voluntary Carbon Standard 2007.1, and the quantity of the reported emission reductions during below reporting period are completely, comparably, accurately and correctly reported.

Reporting period: From 01/12/2009 to 30/06/2010

Verified emission in the above reporting period:

Project emissions	0	t CO2 equivalents
Baseline emissions	86,949	t CO2 equivalents
Emission reductions	86,949	t CO2 equivalents

Wherein:

For the period from 01/12/2009 to 31/12/2009

Verified emission in the above reporting period:

Project emissions	0	t CO2 equivalents
Baseline emissions	14,584	t CO2 equivalents
Emission reductions	14,584	t CO2 equivalents

For the period from 01/01/2010 to 30/06/2010

Verified emission in the above reporting period:

Project emissions	0	t CO2 equivalents
Baseline emissions	72,365	t CO2 equivalents
Emission reductions	72,365	t CO2 equivalents

Statement of Confidentiality

SGS will hold all information confidential until the client instructs otherwise or until it has been released in accordance with the relevant requirements of VCS 2007.1.

A handwritten signature in black ink, appearing to be 'Niclo Deng', is written in a cursive style.

Signature of Lead Assessor: Niclo Deng

9th February 2011

A handwritten signature in black ink, appearing to be 'Elton Chen', is written in a cursive style.

Signature of Technical Reviewer: Elton Chen

9th February 2011

7. Document References

- /1/ ACM0002 version 10 dated 11/06/2009
- /2/ Registered PDD Version 03 dated 17/12/2009
- /3/ CDM Validation report for Guyuan Wuhuaping 49.5 MW Wind Power Project issued by BV dated 04/02/2010
Rev No. 01 Report No. BVC/CHINA-VAL/0192/2009
- /4/ VCS Monitoring Report version 01 dated 21/09/2010, version 01.1 dated 01/12/2010

MR Version	Date of Revision	Main changes reason for Revision
Version 01	21/09/2010	The first version sent to SGS for verification
Version 01.1	01/12/2010	The second version in response to findings raised by DOE. Key changes: 1. Inclusion of information of 10kV backup line in MR 2. Elaboration of significant increase of emission reductions compared to the registered PDD 3. Inclusion of cross check against sales receipts in MR.

ERs calculation spreadsheet version 01.1 dated 01/12/2010

- /5/ Calibration certificates for the meter installed on the main transmission line of the project covering the whole monitoring period issued by North China Grid Company Limited Zhangjiakou Power supply Co., Ltd
- /6/ Accreditation Certificate of North China Grid Company Limited Zhangjiakou Power supply Co., Ltd issued by Hebei Province Quality Technology Surveillance Bureau (accreditation certification No. (Ji) Faji (2008) D011)
- /7/ Daily Reading Records (DRRs) of the wind farm (From 01/12/2009 to 30/06/2010)
- /8/ Monthly Production Reports (MPRs) of the wind farm (From 01/12/2009 to 30/06/2010)
- /9/ Wind turbine generation logbooks of the wind farm
- /10/ Sales receipts for electricity delivered by the Project to the grid
- /11/ Sales receipts for electricity imported by the Project from the grid
- /12/ staff qualification and staff training records
- /13/ Installation schematic diagram and project delineation of the project
- /14/ Company Manual
- /15/ Pages relating to the wind resource in Feasibility Study Report (FSR)
- /16/ Validation and Verification Manual version 01.2 dated 30/07/2010
- /17/ PP's licence of the project
- /18/ PP's statement on not included in an emission trading program

- /19/ LoA from the Chinese DNA for the project
- /20/ Voluntary Carbon Standard 2007.1 dated 18/11/2008
- /21/ VCS Guidance Document: VCS Project Registration and VCU Issuance Process version 1.0
- /22/ Annex 34 to EB 26 meeting report
- /23/ *Technical Administrative Code of Electric Energy Metering* (DL/T448-2000)

- o0o -

A.1 Appendix 1: Findings Overview

Findings Overview Summary

	CARs	CLs	FARs
Total Number raised	1	2	0

Date:	18/11/2010		Raised by:	Niclo Deng & Yuan Xue & Jack Xing	
Type:	CAR	Number:	CAR#1	Reference:	Verification Protocol Section 3
Lead Assessor Comment:				Date: 18/11/2010	
It is found through on-site visit that a 10kV back up line was installed at the project site to import the electricity from the grid in emergency. CAR #1 is raised requesting PP to include information about the backup line in the Monitoring Report and ER spreadsheet and provide relevant meter reading records and sales receipts.					
Project Participant Response:				Date: 01/12/2010	
After the construction period, there remained a 10 kV backup line at the Project Site. The 10 kV backup line was kept connected with the grid in case of emergency. In this monitoring period, no emergency situation occurred so no electricity was imported via the 10 kV backup line. Relevant information about the 10 kV backup line is provided in the monitoring report and the emission reduction calculation spreadsheet. With the meter readings and the clarification letter for the electricity imported via the 10 kV backup line provided by the grid company, it can be demonstrated that no electricity was imported via the 10 kV backup line in this monitoring period.					
Documentation Provided as Evidence by Project Participant:					
Revised monitoring report (version 01.1) dated 01/12/2010; Revised emission reduction calculation spreadsheet (version 01.1) dated 01/12/2010; Clarification letter for the electricity imported via the 10 kV backup line provided by the grid company.					
Information Verified by Lead Assessor:					
Monitoring Report version 01.1 dated 01/12/2010; ER calculation spreadsheet version 01.1 dated 01/12/2010; Clarification letter for the electricity imported via the 10 kV backup line provided by the grid company.					
Reasoning for not Acceptance or Acceptance and Close Out:					
The information about the 10kV backup line has been included in the Monitoring Report version 01.1 dated 01/12/2010. According to clarification letter provided by the grid company, it is able for the assessment team to confirm that there is no electricity imported through this backup line during this monitoring period hence there is no impact to the emission reduction calculation. Therefore, the CAR #1 was closed.					
Acceptance and Close out by Lead Assessor:				Date: [Niclo Deng] 21/12/2010	

Date:	18/11/2010		Raised by:	Niclo Deng & Yuan Xue & Jack Xing		
Type:	CL	Number:	CL #2	Reference:		Verification Protocol section 2.4.6
Lead Assessor Comment:				Date: 18/11/2010		
According to EB48_Annex68 “Guidelines on Completeness Check of Request for Issuance”, Monitoring Report shall contain comparison of the actual emission reduction claimed in the monitoring period with the estimate in the registered PDD, and explanation on any significant increase. The actual emission reductions verified by the assessment team is 20.9% higher than the estimated value in the registered PDD for the same monitoring period. In the Monitoring Report version 01, the PP clarified that this is due to the variety of wind resources. CL #2 is raised requesting PP to to further clarify and justify the significant increase with corresponding evidences.						
Project Participant Response:				Date: 01/12/2010		

Further clarification and justification on the increase of the actual emission reductions in this monitoring period is provided in Section E.6 of the monitoring report. As per the FSR of the Project, the wind speed at the Project Site is higher during winters and springs and lower during summers and autumns. According to the FSR, the monthly average wind speed at 70 m height based on historical wind speed data is shown in Table 1 and Figure 1.

Table 1. Historical monthly average wind speed

Month	1	2	3	4	5	6	7	8	9	10	11	12
Monthly average wind speed (m/s)	5.9	8.0	8.5	8.1	9.2	7.4	6.7	5.7	6.3	7.7	8.3	7.4

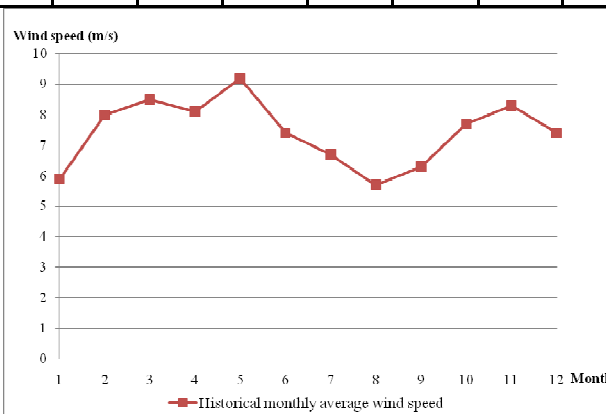


Figure 1. The fluctuation of historical monthly average wind speed

Based on Table 1 and Figure 1, it can be concluded that the wind speed at the Project Site is higher during winters and springs and lower during summers and autumns. This conclusion is consistent with the wind measurement result in the FSR.

Moreover, according to the actual wind speed data, the monthly average wind speed between 01/12/2009 and 30/06/2010 is shown in Table 2.

Table 2. Actual monthly average wind speed

Month	2009-12	2010-01	2010-02	2010-03	2010-04	2010-05	2010-06
Monthly average wind speed (m/s)	7.69	7.65	6.05	8.09	8.12	8.05	6.01

Comparison between the historical monthly average wind speed and the actual monthly average wind speed is shown in Figure 2.

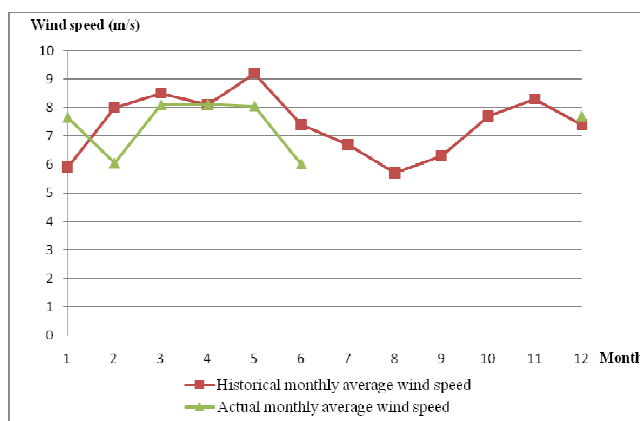


Figure 2. Comparison between the historical monthly average wind speed and the actual monthly average wind speed

As shown in Figure 2, the fluctuation trend of the actual monthly average wind speed is consistent with that of the historical monthly average wind speed provided in the FSR. Therefore, it can be demonstrated that the wind speed at the Project Site is higher during winters and springs and lower during summers and autumns.

Therefore, since this monitoring period is from 01/12/2009 to 30/06/2010 (covering the winter of 2009 and the spring of 2010), it is reasonable that the amount of emission reductions in this monitoring period is higher than the estimated value in the registered PDD (version 03).

Documentation Provided as Evidence by Project Participant:

Revised monitoring report (version 01.1) dated 01/12/2010;
Relevant pages of the FSR on the historical monthly average wind speed.

Information Verified by Lead Assessor:

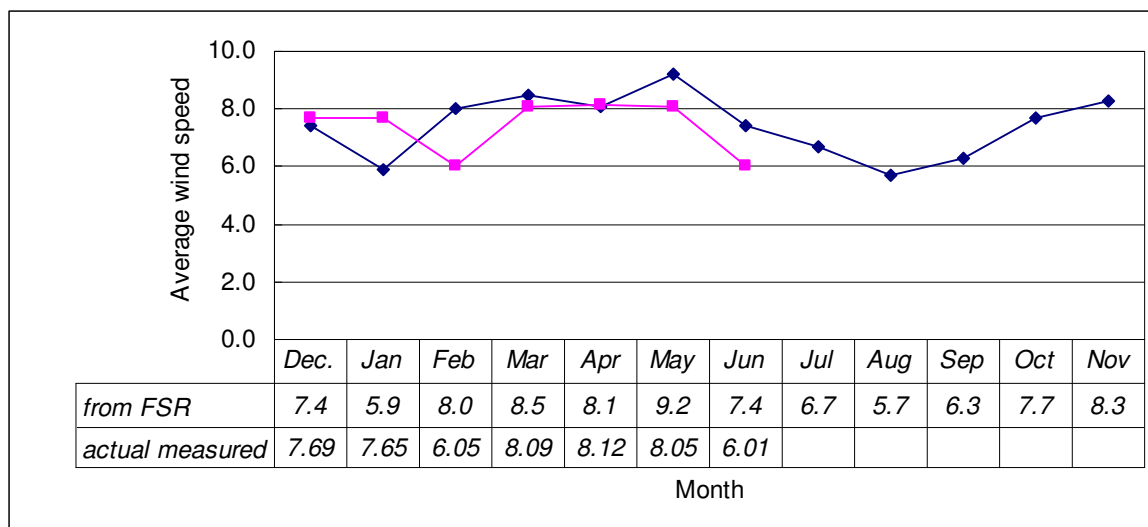
Monitoring Report version 01.1 dated 01/12/2010;
Relevant pages of the FSR on the historical monthly average wind speed.

Reasoning for not Acceptance or Acceptance and Close Out:

It has been confirmed by checking the FSR that the annual power generation in the registered PDD quoted from FSR was estimated based on the wind resource cross a representative year and the wind energy resources varies from month to month. For the period from Dec to Jun, the monthly average wind speed is higher than annual average therefore the wind resources, energy utilizable for power generation and achieved emission reductions from Dec to Jun is higher than calculated values based on the registered PDD using above method that treat the daily wind resources/power generation/emission reductions as uniform.

Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Average
wind speed (m/s)	5.9	8.0	8.5	8.1	9.2	7.4	6.7	5.7	6.3	7.7	8.3	7.4	7.4

Furthermore, actual wind speed was also used to check the consistency of data during historical representative year and this monitoring period. The following diagram shows the comparison of average wind speed during historical representative year and this monitoring period.



It is verified by the assessment team that the variation of monthly average wind speed actually measured is consistent with that described in FSR. This monitoring period from 01/12/2009 to 30/06/2010 covers the months with wind speed higher than the average level, which can well explain the reason of increasing emission reduction than the estimated value in registered PDD. Therefore, CL #2 is closed.

Acceptance and Close out by Lead Assessor:

Date: [Niclo Deng] 21/12/2010

Date:	18/11/2010		Raised by:	Niclo Deng & Yuan Xue & Jack Xing		
Type:	CL	Number:	CL #3		Reference:	AU4 Section 3
Lead Assessor Comment:				Date: 18/11/2010		
According to paragraph 208, VVM version 1.2, information provided in the monitoring report should be cross-checked with other sources. CL #3 is raised requesting PP to provide the sales receipts of electricity imported by the Project from the grid and ensure conservative when determine the electricity imported by the Project from the grid for ER calculation.						
Project Participant Response:				Date: 01/12/2010		

The method to crosscheck the electricity imported by the Project from the grid is provided in the monitoring report and the emission reduction calculation spreadsheet. For the electricity imported by the Project from the grid, electricity data from meter readings can be crosschecked with the data in the clarification letter for the electricity imported by the Project from the grid provided by the grid company. The conservative values between the electricity data from meter readings and those from the clarification letter are used for calculation of emission reductions.

Documentation Provided as Evidence by Project Participant:

Revised monitoring report (version 01.1) dated 01/12/2010;
Revised emission reduction calculation spreadsheet (version 01.1) dated 01/12/2010;
Clarification letter for the electricity imported by the Project from the grid provided by the grid company.

Information Verified by Lead Assessor:

Monitoring Report version 01.1 dated 01/12/2010;
ER calculation spreadsheet version 01.1 dated 01/12/2010;
Clarification letter for the electricity imported by the Project from the grid provided by the grid company.

Reasoning for not Acceptance or Acceptance and Close Out:

According to monitoring plan in the registered PDD, if there is difference between the monitored data and the data on receipts, the conservative values will be used to estimate emission reductions.

The clarification letter for electricity imported by the Project from the grid issued by the grid company, serving as the sales receipts were provided to the assessment team for cross check. For ER calculation, a conservative approach is adopted to take the smaller value of the electricity delivered by the Project to the grid and bigger value of electricity imported by the Project from the grid between the two sources of meter readings and sales receipts to calculate the quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the Project ($EG_{PJ,y}$).

Acceptance and Close out by Lead Assessor:

Date: [Niclo Deng] 21/12/2010

A.2 Appendix 2: Competency statements of team members

Statement of Competence

Name: **Niclo Deng**

Status

- Lead Assessor	x	- Expert	x
- Assessor	x	- Financial Expert	
- Local Assessor	China	- Technical Reviewer	x

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	x
<i>Sub scope(s): Wind</i>	
<i>Combined heat and Power & Waste Heat</i>	
2. Energy Distribution	
<i>Sub scope(s):</i>	
3. Energy Demand	
<i>Sub scope(s):</i>	
4. Manufacturing	
<i>Sub scope(s):</i>	
5. Chemical Industry	
<i>Sub scope(s):</i>	
6. Construction	
<i>Sub scope(s):</i>	
7. Transport	
<i>Sub scope(s):</i>	
8. Mining/Mineral Production	
<i>Sub scope(s):</i>	
9. Metal Production	
<i>Sub scope(s):</i>	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
<i>Sub scope(s):</i>	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
<i>Sub scope(s):</i>	
12. Solvent Use	
<i>Sub scope(s):</i>	
13. Waste Handling and Disposal	
<i>Sub scope(s):</i>	
14. Afforestation and Reforestation	
<i>Sub scope(s):</i>	
15. Agriculture	
<i>Sub scope(s):</i>	

Approved Member of Staff by:

Siddharth Yadav

Date:

19/5/2010

Statement of Competence

Name: Yuan, Xue

Status

- Lead Assessor	x	- Expert	x
- Assessor	x	- Financial Expert	
- Local Assessor	x China	- Technical Reviewer	

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	x
<i>Sub scope(s): Hydro, Wind</i>	
2. Energy Distribution	
<i>Sub scope(s):</i>	
3. Energy Demand	
<i>Sub scope(s):</i>	
4. Manufacturing	
<i>Sub scope(s):</i>	
5. Chemical Industry	
<i>Sub scope(s):</i>	
6. Construction	
<i>Sub scope(s):</i>	
7. Transport	
<i>Sub scope(s):</i>	
8. Mining/Mineral Production	
<i>Sub scope(s):</i>	
9. Metal Production	
<i>Sub scope(s):</i>	
10. Fugitive Emissions from Fuels (solid, oil and gas)	
<i>Sub scope(s):</i>	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
<i>Sub scope(s):</i>	
12. Solvent Use	
<i>Sub scope(s):</i>	
13. Waste Handling and Disposal	
<i>Sub scope(s):</i>	
14. Afforestation and Reforestation	
<i>Sub scope(s):</i>	
15. Agriculture	
<i>Sub scope(s):</i>	

Approved Member of Staff by:

Siddharth Yadav

Date:

05/11/2010

Statement of Competence

Name: Jack Xing

Status

- Lead Assessor		- Expert	x
- Assessor		- Financial Expert	
- Local Assessor	China	- Technical Reviewer	

Scopes of Expertise

5. Energy Industries (renewable / non-renewable)	x
<i>Sub scope(s):</i> Wind	
6. Energy Distribution	
<i>Sub scope(s):</i>	
7. Energy Demand	
<i>Sub scope(s):</i>	
8. Manufacturing	
<i>Sub scope(s):</i>	
16. Chemical Industry	
<i>Sub scope(s):</i>	
17. Construction	
<i>Sub scope(s):</i>	
18. Transport	
<i>Sub scope(s):</i>	
19. Mining/Mineral Production	
<i>Sub scope(s):</i>	
20. Metal Production	
<i>Sub scope(s):</i>	
21. Fugitive Emissions from Fuels (solid, oil and gas)	
<i>Sub scope(s):</i>	
22. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
<i>Sub scope(s):</i>	
23. Solvent Use	
<i>Sub scope(s):</i>	
24. Waste Handling and Disposal	
<i>Sub scope(s):</i>	
25. Afforestation and Reforestation	
<i>Sub scope(s):</i>	
26. Agriculture	
<i>Sub scope(s):</i>	

Approved Member of Staff by: Siddharth Yadav Date: 22.06.2010

Statement of Competence

Name: **Chen, Elton.**

Status

- Lead Assessor	☐	- Expert	☒
- Assessor	☐	- Financial Expert	☐
- Local Assessor	☐	- Technical Reviewer	☒

Scopes of Expertise

1. Energy Industries (renewable / non-renewable)	☒
<i>Sub scope(s): Hydro, Wind</i>	
2. Energy Distribution	☐
<i>Sub scope(s):</i>	
3. Energy Demand	☐
<i>Sub scope(s):</i>	
4. Manufacturing	☐
<i>Sub scope(s):</i>	
5. Chemical Industry	☐
<i>Sub scope(s):</i>	
6. Construction	☐
<i>Sub scope(s):</i>	
7. Transport	☐
<i>Sub scope(s):</i>	
8. Mining/Mineral Production	☐
<i>Sub scope(s):</i>	
9. Metal Production	☐
<i>Sub scope(s):</i>	
10. Fugitive Emissions from Fuels (solid, oil and gas)	☐
<i>Sub scope(s):</i>	
11. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	☐
<i>Sub scope(s):</i>	
12. Solvent Use	☐
<i>Sub scope(s):</i>	
13. Waste Handling and Disposal	☐
<i>Sub scope(s):</i>	
14. Afforestation and Reforestation	☐
<i>Sub scope(s):</i>	
15. Agriculture	☐
<i>Sub scope(s):</i>	

Approved Member of Staff by:

Siddharth Yadav

Date:

29/09/2009

Statement of Competence

Name: Shute Li

Status

- Lead Assessor		- Expert	x
- Assessor		- Financial Expert	
- Local Assessor	China	- Technical Reviewer	

Scopes of Expertise

9. Energy Industries (renewable / non-renewable)	x
<i>Sub scope(s):</i> Hydro	
10. Energy Distribution	
<i>Sub scope(s):</i>	
11. Energy Demand	
<i>Sub scope(s):</i>	
12. Manufacturing	
<i>Sub scope(s):</i>	
27. Chemical Industry	
<i>Sub scope(s):</i>	
28. Construction	
<i>Sub scope(s):</i>	
29. Transport	
<i>Sub scope(s):</i>	
30. Mining/Mineral Production	
<i>Sub scope(s):</i>	
31. Metal Production	
<i>Sub scope(s):</i>	
32. Fugitive Emissions from Fuels (solid, oil and gas)	
<i>Sub scope(s):</i>	
33. Fugitive Emissions from Production and Consumption of Halocarbons and Sulphur Hexafluoride	
<i>Sub scope(s):</i>	
34. Solvent Use	
<i>Sub scope(s):</i>	
35. Waste Handling and Disposal	x
<i>Sub scope(s):</i> Landfill gas	
36. Afforestation and Reforestation	
<i>Sub scope(s):</i>	
37. Agriculture	
<i>Sub scope(s):</i>	

Approved Member of Staff by: Siddharth Yadav Date: 07/06/2010

A.3 Appendix 3: Validation opinion of clauses 1.12, 1.13, 1.14, 8.1 and 8.2 of the VCS project Description Template

Validation opinion of clauses 1.12, 1.13, 1.14, 8.1 and 8.2 of the VCS Project Description Template

The project was registered as CDM project on 03/07/2010, which is also the starting date of the first CDM crediting period of the project. This is the verification prior to CDM crediting period for the project against VCS 2007.1 covering the period from 01/12/2009 to 30/06/2010. The end date of this monitoring period is the day before the CDM registration date of the project.

VCS Further Guidance for Projects that are registered in Two GHG Programs dated 19/03/2008 specifies that Projects registered under other VCS Program approved GHG Programs (such as the CDM) are eligible to create Voluntary Carbon Units (VCUs) for the emissions reductions or removals not registered under that GHG Program. The VCUs can be registered back to the project start date (as defined by provisions in VCS 2007.1 Clause 5.2.1) as early as to 28/03/2006 or two years prior to the completion of the project validation whatever is later. The final CDM validation report for the project was issued by BV with Rev No. 01 Report No. BVC/CHINA-VAL/0192/2009 dated 04/02/2010. Thus, the start date of this VCS monitoring period fulfils the requirements prescribed in this Guidance.

Pursuant to section 4.1.4 of VCS guidance document: VCS project registration and VCU issuance process version 1.1 (a further validation has been completed of clauses 1.12, 1.13, 1.14, 8.1 and 8.2 of the VCS project. Details of validation are presented as below:

Clauses 1.12: *Demonstration to confirm that the project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction.*

The project is a newly-built wind power plant. The electricity generated by the project is supplied to North China Grid (NCG) for sales. So, the project is not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction.

Clause 1.13: *Demonstration that the project has not created another form of environmental credit (for example renewable energy certificates).*

The project was registered as CDM project on 03/07/2010 and the start date of the first CDM crediting period is 03/07/2010. Credits issued after 03/07/2010 will be used as CERs. The project proponent chooses a clear VCS crediting period from 01/12/2009 to 30/06/2010. Through interview with the project owner and document review of the statement from the project owner confirming that the project does not create another form of environmental credit (/18/), it is validated that the project has not created another form of environmental credit.

Clause 1.14: *Project rejected under other GHG programs (if applicable).*

Through interview with the project owner and review of the UNFCCC website <http://cdm.unfccc.int/Projects/DB/BVQI1265358035.51/view>, it is validated that the project has been registered as a CDM project on 03/07/2010. It has been validated that the project has not been rejected under other GHG programs.

Clause 8.1: *Proof of Title*

Power Purchase Agreement (PPA) signed between the project owner and the grid company (**Error! Reference source not found.**), business licence (/17/) and related approvals for the project have been provided and verified. In the Letter of Approval (LoA) issued by the Chinese DNA (/19/), it is indicated that the project owner is authorized as Chinese participant to voluntarily participate in and carry out the project activity, this has been validated as a right of use of the project arising or granted under statute, regulation or decree by a competent authority. Moreover, the business license issued by local government to the project owner shows that the project owner The Construction Investment Yanshan (Guyuan) Wind Energy Co., Ltd. has the right of use property or contractual right in the plant, equipment or process that generate GHG emission reductions and/or removals. It is validated to be fulfilled in respect of the requirement set out in the VCS Program Normative Document: Project Registration and VCU Issuance Process dated 21/01/2010.

Clause 8.2: *Projects that reduce GHG emissions from activities that participate in an emissions trading program (if applicable)*

Through interview with the project owner, it is validated that the project owner is not included in another voluntary emission trading programme listed on the website of VCS (www.v-c-s.org) during this monitoring period. The PP has provided a statement confirming that the ERs generated from the project will be sold only once and the legal title of the ERs will be passed to the buyer on delivery of the VCUs.

The project takes place in China, which has no emission reductions target and the project is not a micro or mega project. There are no mandatory emission trading programmes in China. The project is not a grouped one. The PP has confirmed that there is no financially sensitive information that is provided to the DOE.

The project helps improving local economy, increasing local financial income and promoting electricity utilization in the local area. The project is in compliance with all the relevant local laws and regulations for environmental protection, energy conservation and sustainable development. The project has obtained approvals from relevant authorities. There are no risks that may substantially affect the project's GHG emission reductions.

VALIDATION STATEMENT: According to the validation report for the project for CDM registration and the above further validation of Clauses 1.12, 1.13, 1.14, 8.1 and 8.2 of the VCS PD, it is validated that the Project “Guyuan Wuhuaping 49.5 MW Wind Power Project” is in compliance with the VCS Program requirements as set out in the VCS Rules.

A.4 Appendix 4: Monitoring Report

MONITORING REPORT FORM Version 01 - in effect as of: 28/09/2010

CONTENTS

- A. General description of the project activity
 - A.1. Brief description of the project activity
 - A.2. Project participants
 - A.3. Location of the project activity
 - A.4. Technical description of the project
 - A.5. Title, reference and version of the baseline and monitoring methodology applied to the project activity
 - A.6. Monitoring period of the project activity and related information
 - A.7. Name of responsible person(s)/entity(ies)
- B. Implementation of the project activity
 - B.1. Implementation status of the project activity
 - B.2. Revision of the monitoring plan
 - B.3. Request for deviation applied to this monitoring period
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- C. Description of the monitoring system
- D. Data and parameters monitored
 - D.1. Data and parameters used to calculate baseline emissions
 - D.2. Data and parameters used to calculate project emissions
 - D.3. Data and parameters used to calculate leakage emissions
 - D.4. Other relevant data and parameters
- E. Emission reductions calculation
 - E.1. Baseline emissions calculation
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 - E.5. Comparison of actual emission reductions with estimates in the registered CDM-PDD
 - E.6. Remarks on difference from estimated value
- F. Clarification of clauses 1.12, 1.13, 1.14, 8.1 and 8.2 of the VCS PD template

MONITORING REPORT
Version 01.1 on 01/12/2010^[1]

Guyuan Wuhuaping 49.5 MW Wind Power Project
Reference number: 3356
The first monitoring period (from 01/12/2009 to 30/06/2010)

SECTION A. General description of the project activity

A.1. Brief description of the project activity:

>>

Guyuan Wuhuaping 49.5 MW Wind Power Project (hereinafter referred to as the Project) is located within Pingdingbu Town, Guyuan County, Zhangjiakou City, Hebei Province, P.R.China. It is invested, constructed and operated by Construction Investment Yanshan (Guyuan) Wind Energy Co., Ltd.

The total installed capacity of the Project is 49.5 MW equipped with 33 sets of wind turbines with a unit installed capacity of 1,500 kW. Electricity generated by the Project is delivered to North China Grid via a 110 kV transmission line. The Project as a renewable energy source generates emission reductions by avoiding CO₂ emissions from the same amount of electricity generation from North China Grid, which is mainly composed of traditional thermal power plants.

Construction of the Project was started on 10/05/2009^[2] and the Project was commissioned on 30/10/2009.

This Monitoring Report focuses on the emission reductions generated by the Project from 01/12/2009 to 30/06/2010. The actual emission reductions of the Project are 86,949 tCO₂e in this monitoring period.

A.2. Project Participants

>>

Name of Party involved (*) ((host indicates a host Party)	Private and/or public entity(ies) project participants (*) (as applicable)	Kindly indicate if the Party involved wishes to be considered as project participant (Yes/No)
P.R.China (host)	Construction Investment Yanshan (Guyuan) Wind Energy Co., Ltd. (the Project Owner)	Yes

A.3. Location of the project activity:

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The Project is located within Pingdingbu Town, Guyuan County, Zhangjiakou City, Hebei Province, P.R.China. The center of the Project has geographical coordinates with east longitude of 115°45'08" and north latitude of 41°36'36".

A.4. Technical description of the project

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^[1] The date format in this report is DD/MM/YYYY.

^[2] The date is obtained from *Starting Construction Order* of the Project issued on 10/05/2009.

Wind power generation is the conversion of wind energy into electricity. In the wind farm, individual turbines are interconnected with a power collection system and communication network. At a substation, the voltage is boosted with a transformer for connection to the high voltage electric power transmission system.^[3]

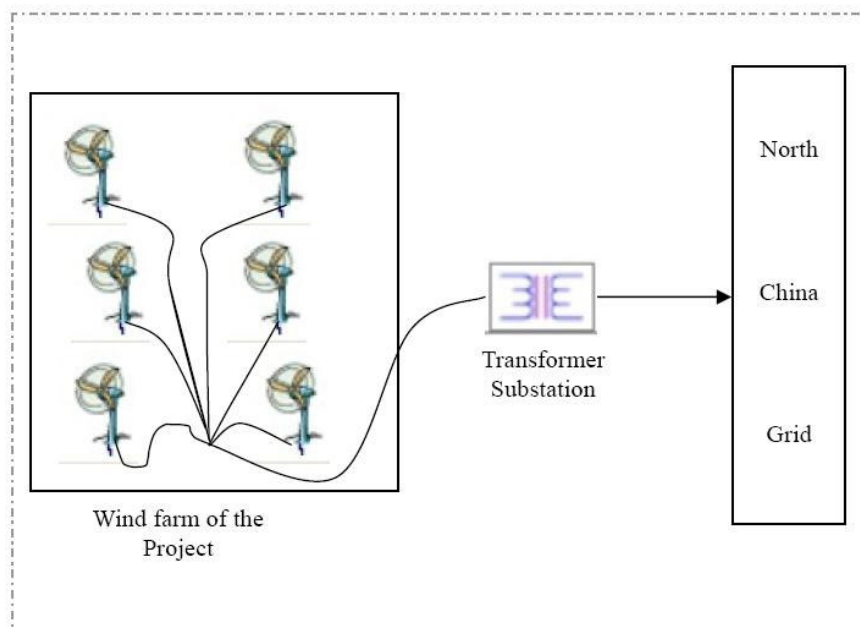


Figure 1. Schematic diagram of wind power generation in the Project

The total installed capacity of the Project is 49.5 MW equipped with 33 sets of wind turbines with a unit installed capacity of 1,500 kW. Electricity generated by the Project is delivered to North China Grid via a 110 kV transmission line.

Key technical parameters of turbines in the Project are shown in Table 1.

Table 1. Key technical parameters of turbines in the Project

Equipment	Quantity	Type	Technical parameters	Source
Turbine	33 sets	GE1.5sle	Rated power: 1,500 kW Quantity of blades: 3 Height of the hub: 80 m Lifetime: 20 yrs	<i>Turbine Purchase Agreement</i> of the Project
			Power factor of generator: ± 0.95 Annual operating hours: 2,368 h	The Feasibility Study Report (hereinafter referred to as the FSR) of the Project

A.5. Title, reference and version of the baseline and monitoring methodology applied to the project activity:

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Approved consolidated baseline and monitoring methodology ACM0002 (version 10): *Consolidated baseline methodology for grid-connected electricity generation from renewable sources* and monitoring methodology.

Tool to calculate the emission factor for an electricity system (version 02).

[3] For more information regarding wind power generation, please refer to http://en.wikipedia.org/wiki/Wind_power.

Tool for the demonstration and assessment of additionality (version 05.2).

For more information regarding the methodology please refer to
<http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html>.

A.6. Monitoring period of the project activity and related information:
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>>

This VCS monitoring period of the Project is from 01/12/2009 to 30/06/2010.

The Project was registered as a CDM project on 03/07/2010. As per *Further Guidance for Projects that are Registered in Two GHG Programs* published on 19/03/2008, "Projects registered under other VCS Program approved GHG Programs (such as the CDM) are eligible to create Voluntary Carbon Units (VCUs) for the emissions reductions or removals not registered under that GHG Program. The VCUs can be registered back to the project start date provisions in VCS 2007 Clause 5.2.1. This is, 28 March 2006 or two years prior to the completion of the project validation whatever is later."

The final CDM validation report for the Project was issued by Bureau Veritas Certification on 04/02/2010. The starting date of this VCS monitoring period (i.e. 01/12/2009) is after both 28/03/2006 and 04/02/2008 (two years prior to the completion of the project validation). Therefore, requirements provided in *Further Guidance for Projects that are Registered in Two GHG Programs* are fulfilled by the Project.

A.7. Name of responsible person(s)/entity(ies):
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>>

James Shan JIANG
Additional Consulting and Engineering
Tel: +86-13911049424
Email: James@Additional.cn

SECTION B. Implementation of the project activity

B.1. Implementation status of the project activity

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The Project is a greenfield grid-connected wind power project. The total installed capacity of the Project is 49.5 MW equipped with 33 sets of wind turbines with a unit installed capacity of 1,500 kW. Electricity generated by the Project is delivered to North China Grid via a 110 kV transmission line. Please refer to Table 1 for key technical parameters of turbines in the Project.

Construction of the Project was started on 10/05/2009^[4]. And the Project was commissioned on 30/10/2009.

From 30/10/2009 till now, key equipments of the Project have worked in line with the registered CDM-PDD (version 03) approved by CDM EB. During this monitoring period, no overhaul was undertaken for the Project and there was no downtime or exchange of equipment.

No special event or situation, which may impact the applicability of the methodology, occurred in this monitoring period.

B.2. Revision of the monitoring plan

>>

There is no revision of the monitoring plan of the Project.

B.3. Request for deviation applied to this monitoring period

>>

There is no deviation applied to this monitoring period.

B.4. Notification or request of approval of changes

>>

There is no notification or request of approval of changes from the Project as described in the registered CDM-PDD (version 03).

^[4] The date is obtained from *Starting Construction Order* of the Project issued on 10/05/2009.

SECTION C. Description of the monitoring system

>>

In line with the methodology ACM0002 (version 10) and the registered CDM-PDD (version 03), it is required to monitor the following parameters:

Parameter	Description
$EG_{PJtoGRID,y}$	The electricity delivered by the Project to the grid in year y
$EG_{GRIDtoPJ,y}$	The electricity imported by the Project from the grid in year y
$EG_{PJ,y}$	The quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the Project in year y

Monitoring point of the Project

The monitoring point of the Project is shown in Figure 2.

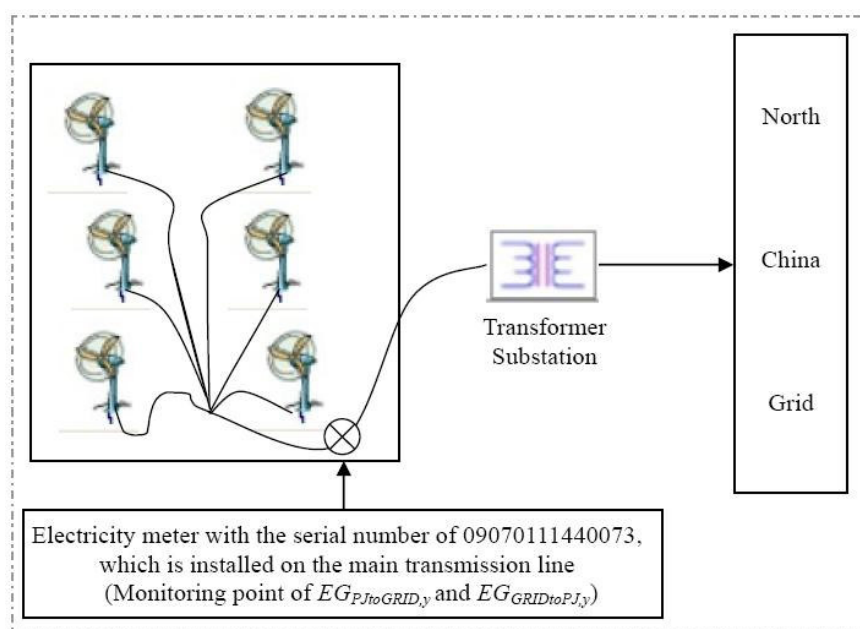


Figure 2. Monitoring point of the Project

Information on the monitoring equipment used in the Project is summarized in Table 2.

Table 2. Monitoring equipment used in the Project

Parameter	Monitoring point	Serial number	Accuracy class
$EG_{PJtoGRID,y}$	Electricity meter installed on the main transmission line of the Project	09070111440073	0.2s
$EG_{GRIDtoPJ,y}$	Electricity meter installed on the main transmission line of the Project	09070111440073	0.2s
$EG_{PJ,y}$	N/A	N/A	N/A

Data generation, recording and calculation

The electricity delivered by the Project to the grid in year y:

The electricity delivered by the Project to the grid in year y ($EG_{PJtoGRID,y}$) was continuously measured by the bi-directional electricity meter installed on the main transmission line of the Project.

Readings of the electricity meter were recorded every day in the Daily Reading Records by designated personnel at the wind farm of the Project. Designated personnel of the Project Owner monthly summarized and recorded readings of the electricity meter in Monthly Production Report of the Project to verify the data.

For the electricity delivered by the Project to the grid ($EG_{PJtoGRID,y}$), Electricity Transaction Notes (hereinafter referred to as ETNs) were monthly issued by the grid company to the Project Owner. Based on the data on ETNs, the Project Owner issued sales receipts to the grid company subsequently on a monthly basis. ETNs issued by the grid company are used as sales receipts for crosscheck.

The electricity imported by the Project from the grid in year y :

The electricity imported by the Project from the grid in year y ($EG_{GRIDtoPJ,y}$) was continuously measured by the bi-directional electricity meter installed on the main transmission line of the Project.

Readings of the electricity meter were recorded every day in the Daily Reading Records by designated personnel at the wind farm of the Project. Designated personnel of the Project Owner monthly summarized and recorded readings of the electricity meter in Monthly Production Report of the Project to verify the data.

For the electricity imported by the Project from the grid ($EG_{GRIDtoPJ,y}$), sales receipts were issued by the grid company to the Project Owner on a monthly basis. Sales receipts issued by the grid company are used for crosscheck.

The quantity of net electricity generation:

The quantity of net electricity generation that was produced and fed into the grid as a result of the implementation of the Project in year y ($EG_{PJ,y}$) was calculated monthly with on-site monitored data of $EG_{PJtoGRID,y}$ and $EG_{GRIDtoPJ,y}$ using the formula $EG_{PJ,y} = EG_{PJtoGRID,y} - EG_{GRIDtoPJ,y}$.

Organizational structure, roles and responsibilities of personnel

The operation and management structure and the responsibilities of the principals are as follows.

The chief responsible person for the Project is Zhao Yongchao, Project Manager of CDM Office. Responsibilities for the monitoring activities are listed in Table 3.

Table 3. Responsibilities for Monitoring Activities

Activity	Responsible person
- Reading and recording of electricity meters - Collection and archiving of reading records of electricity meters - Collection and archiving of electricity sales receipts	Liu Jian, Yang Zhongjie, Yao Bin
- Calibration and maintenance of electricity meters - Collection and archiving of calibration certificates of electricity meters	Liu Jian, Han Jianying, Zhang Xiangdong
- Operation and maintenance of the Project	Liu Jian, Yang Zhongjie, Yao Bin
- Training of staff - Collection and archiving of training records	Liu Jian, Yao Bin

Emergency procedures

If abnormal operation happens, on-site operators should immediately report to Emergency Office. Emergency Office takes the responsibility to handle the erroneous measurement as follows:

- If the reason for erroneous measurement is the malfunction of the meter(s), use the data automatically obtained and saved by the computer system as backup.
- If the erroneous measurement is caused by employees in charge of recording, use the data automatically obtained and saved by the computer system as backup. At the same time, training courses will be re-arranged for relevant employees to ensure the correct implementation of the monitoring plan, so as to prevent error.

SECTION D. Data and parameters

D.1. Data and parameters determined at registration and not monitored during the monitoring period, including default values and factors

>>

Data / Parameter:	$CAP_{i,y}$
Data unit:	MW
Description:	Total installed capacity of province j of North China Grid in year y
Source of data used:	<i>China Electric Power Yearbook</i> from 2005 to 2007
Value(s) :	See Annex 3 of the registered CDM-PDD (version 03) for details.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	The data are used for calculation of baseline emissions.
Additional comment:	-

Data / Parameter:	$GEN_{i,y}$
Data unit:	MWh
Description:	Total power generation of province j of North China Grid in year y
Source of data used:	<i>China Electric Power Yearbook</i> from 2005 to 2007
Value(s) :	See Annex 3 of the registered CDM-PDD (version 03) for details.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	The data are used for calculation of baseline emissions.
Additional comment:	-

Data / Parameter:	$r_{i,y}$
Data unit:	-
Description:	Auxiliary electricity consumption rate of province j of North China Grid in year y
Source of data used:	<i>China Electric Power Yearbook</i> from 2005 to 2007
Value(s) :	See Annex 3 of the registered CDM-PDD (version 03) for details.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	The data are used for calculation of baseline emissions.
Additional comment:	-

Data / Parameter:	$F_{i,j,y}$
Data unit:	t or m ³
Description:	Consumption of fuel i of province j of North China Grid in year y
Source of data used:	<i>China Energy Statistical Yearbook</i> from 2005 to 2007
Value(s) :	See Annex 3 of the registered CDM-PDD (version 03) for details.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	The data are used for calculation of baseline emissions.
Additional comment:	-

Data / Parameter:	$NCV_{i,y}$
Data unit:	TJ per mass or volume unit of fuel i in year y
Description:	Net calorific value of fuel i
Source of data used:	P287 of <i>China Energy Statistical Yearbook</i> 2007 edition
Value(s) :	See Annex 3 of the registered CDM-PDD (version 03) for details.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	The data are used for calculation of baseline emissions.
Additional comment:	-

Data / Parameter:	$EF_{CO_2,i,y}$
Data unit:	tC/TJ
Description:	CO ₂ emission factor per unit of energy of the fuel i in year y
Source of data used:	<i>2006 IPCC Guideline for National Greenhouse Gas Inventories</i>
Value(s) :	See Annex 3 of the registered CDM-PDD (version 03) for details.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	The data are used for calculation of baseline emissions.
Additional comment:	-

Data / Parameter:	$FC_{adv,coal}$
Data unit:	gCe/kWh
Description:	Weighted average of the fuel consumption for power generation of top 30 sets of 600 MW coal fired power generation units built in 2006 (taken as efficiency level of the best technology commercially available in China)
Source of data used:	<i>China's Regional Grid Baseline Emission Factors</i> (renewed on 30/12/2008)
Value(s) :	329.94
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	The data are used for calculation of baseline emissions.
Additional comment:	-

Data / Parameter:	$FC_{adv.oil/gas}$
Data unit:	gCe/kWh
Description:	Weighted average of the fuel consumption for power generation of 200 MW oil/gas fired combined cycle power generation units (taken as efficiency level of the best technology commercially available in China)
Source of data used:	China's Regional Grid Baseline Emission Factors (renewed on 30/12/2008)
Value(s) :	252
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	The data are used for calculation of baseline emissions.
Additional comment:	-

D.2. Data and parameters monitored

>>

Data / Parameter:	$EG_{PJ,y}$
Data unit:	MWh
Description:	The quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the Project in year y
Measured /Calculated /Default:	Calculated
Source of data:	The quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the Project in year y ($EG_{PJ,y}$) is calculated monthly with on-site monitored data of $EG_{PJtoGRID,y}$ and $EG_{GRIDtoPJ,y}$.
Value(s) of monitored parameter:	82,428.486
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	The data are used for calculation of baseline emissions.
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	-
Measuring/ Reading/ Recording frequency:	The quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the Project in year y ($EG_{PJ,y}$) is calculated monthly with on-site monitored data of $EG_{PJtoGRID,y}$ and $EG_{GRIDtoPJ,y}$.
Calculation method (if applicable):	Calculated as $EG_{PJtoGRID,y} - EG_{GRIDtoPJ,y}$.
QA/QC procedures applied:	Receipt(s) is used for crosscheck.

Data / Parameter:	$EG_{PJtoGRID,y}$		
Data unit:	MWh		
Description:	The electricity delivered by the Project to the grid in year y		
Measured /Calculated /Default:	Measured		
Source of data:	The electricity delivered by the Project to the grid in year y ($EG_{PJtoGRID,y}$) is determined as the conservative value between Monthly Production Reports and electricity sales receipts.		
Value(s) of monitored parameter:	82,551.246		
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	The data are used for calculation of baseline emissions.		
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)		Monitoring equipment	Electricity meter installed on the main transmission line of the Project
		Type	Electricity meter
		Accuracy class	0.2s
		Serial number	09070111440073
		Calibration frequency	Once a year
		Date of last calibration	15/09/2009
		Validity	One year
Measuring/ Reading/ Recording frequency:	The electricity delivered by the Project to the grid in year y ($EG_{PJtoGRID,y}$) is continuously measured by the bi-directional electricity meter installed on the main transmission line of the Project and monthly recorded.		
Calculation method (if applicable):	-		
QA/QC procedures applied:	Receipt(s) is used for crosscheck.		

Data / Parameter:	$EG_{GRIDtoPJ,y}$		
Data unit:	MWh		
Description:	The electricity imported by the Project from the grid in year y		
Measured /Calculated /Default:	Measured		
Source of data:	The electricity imported by the Project from the grid in year y ($EG_{GRIDtoPJ,y}$) is determined as the conservative value between Monthly Production Reports and electricity sales receipts.		
Value(s) of monitored parameter:	122.76		
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	The data are used for calculation of baseline emissions.		
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)		Monitoring equipment	Electricity meter installed on the main transmission line of the Project
		Type	Electricity meter
		Accuracy class	0.2s
		Serial number	09070111440073
		Calibration frequency	Once a year
		Date of last calibration	15/09/2009
		Validity	One year
Measuring/ Reading/ Recording frequency:	The electricity imported by the Project from the grid in year y ($EG_{GRIDtoPJ,y}$) is continuously measured by the bi-directional electricity meter installed on the main transmission line of the Project and monthly recorded.		
Calculation method (if applicable):	-		
QA/QC procedures applied:	Receipt(s) is used for crosscheck.		

SECTION E. Emission reductions calculation

E.1. Baseline emissions calculation

>>

As per the registered CDM-PDD (version 03), the baseline emissions of the Project include only CO₂ emissions from electricity generation in North China Grid that the Project is connected to. The baseline emissions are calculated as follows:

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y} \quad (1)$$

Where:

BE_y is the baseline emissions in year y (tCO₂e);

$EG_{PJ,y}$ is the quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh);

$EF_{grid,CM,y}$ is the combined margin CO₂ emission factor for grid connected power generation in year y calculated using *Tool to calculate the emission factor for an electricity system* (tCO₂e/MWh).

Net electricity generation supplied by the Project ($EG_{PJ,y}$)

As per the registered CDM-PDD (version 03), the Project is the installation of a new grid-connected renewable power plant at a site where no renewable power plant was operated prior to the implementation of the Project, so:

$$EG_{PJ,y} = EG_{facility,y} \quad (2)$$

$$EG_{PJ,y} = EG_{PJtoGRID,y} - EG_{GRIDtoPJ,y} \quad (3)$$

Where:

$EG_{PJ,y}$ is the quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh);

$EG_{facility,y}$ is the quantity of net electricity generation supplied by the Project to the grid in year y (MWh);

$EG_{PJtoGRID,y}$ is the electricity supplied by the Project to the grid in year y (MWh);

$EG_{GRIDtoPJ,y}$ is the electricity imported by the Project from the grid in year y (MWh).

Please refer to Table 4 and Table 5 for details.

Table 4. Electricity supplied by the Project to the grid (Unit: MWh)

Period	Electricity data from meter readings	Electricity data from sales receipts	Conservative value for ER calculation
	A	B	C=min(A,B)
01/12/2009 ~ 31/12/2009	13,887.720	13,836.805	13,836.805
Subtotal of the electricity supplied by the Project in 2009			13,836.805
01/01/2010 ~ 31/01/2010	12,080.640	12,028.895	12,028.895
01/02/2010 ~ 28/02/2010	9,287.520	9,226.254	9,226.254
01/03/2010 ~ 31/03/2010	13,717.440	13,678.267	13,678.267
01/04/2010 ~ 30/04/2010	14,596.560	14,531.232	14,531.232
01/05/2010 ~ 31/05/2010	12,695.760	12,635.288	12,635.288
01/06/2010 ~ 30/06/2010	6,646.200	6,614.505	6,614.505
Subtotal of the electricity supplied by the Project in 2010			68,714.441
Total electricity supplied by the Project in this monitoring period			82,551.246

As shown in Table 4, the electricity supplied by the Project to the grid in 2009 is 13,836.805 MWh and the electricity supplied by the Project to the grid in 2010 is 68,714.441 MWh. The total amount of the electricity supplied by the Project to the grid in this monitoring period ($EG_{PJtoGRID,y}$) is 82,551.246 MWh.

Table 5. Electricity imported by the Project from the grid (Unit: MWh)

Period	Electricity data from meter readings	Electricity data from sales receipts	Conservative value for ER calculation
	D	E	F=max(D,E)
01/12/2009 ~ 31/12/2009	10.560	6.034	10.560
Subtotal of the electricity imported by the Project in 2009			10.560
01/01/2010 ~ 31/01/2010	31.680	26.730	31.680
01/02/2010 ~ 28/02/2010	25.080	20.621	25.080
01/03/2010 ~ 31/03/2010	10.560	7.680	10.560
01/04/2010 ~ 30/04/2010	7.920	6.092	7.920
01/05/2010 ~ 31/05/2010	10.560	8.448	10.560
01/06/2010 ~ 30/06/2010	26.400	23.294	26.400
Subtotal of the electricity imported by the Project in 2010			112.200
Total electricity imported by the Project in this monitoring period			122.760

As shown in Table 5, the electricity imported by the Project from the grid in 2009 is 10.560 MWh and the electricity imported by the Project from the grid in 2010 is 112.200 MWh. The total amount of the electricity imported by the Project from the grid in this monitoring period ($EG_{GRIDtoPJ,y}$) is 122.760 MWh.

Moreover, after the construction period, there remained a 10 kV backup line at the Project Site. The 10 kV backup line was kept connected with the grid in case of emergency. In this monitoring period, no emergency situation occurred so no electricity was imported via the 10 kV backup line. Please refer to Table 6 for details.

Table 6. Electricity imported via the 10 kV backup line (Unit: MWh)

Period	Electricity data from meter readings	Electricity data from sales receipts	Conservative value for ER calculation
	G	H	I=max(G,H)
01/12/2009 ~ 31/12/2009	0	0	0
Subtotal of the electricity imported via the 10 kV backup line in 2009			0
01/01/2010 ~ 31/01/2010	0	0	0
01/02/2010 ~ 28/02/2010	0	0	0
01/03/2010 ~ 31/03/2010	0	0	0
01/04/2010 ~ 30/04/2010	0	0	0
01/05/2010 ~ 31/05/2010	0	0	0
01/06/2010 ~ 30/06/2010	0	0	0
Subtotal of the electricity imported via the 10 kV backup line in 2010			0
Total electricity imported via the 10 kV backup line in this monitoring period			0

To be conservative, if there was electricity imported via the 10 kV backup line, the electricity imported via the 10 kV backup line ($EG_{BackupLine}$) would be subtracted from the net electricity generation of the Project ($EG_{PJ,y}$). However, as shown in Table 6, no electricity was imported via the 10 kV backup line in this monitoring period. Therefore, the net electricity generation used for calculation of emission reductions can be calculated as $EG_{PJ,y} - EG_{BackupLine} = EG_{PJ,y} - 0 = EG_{PJ,y}$.

Based on Table 4, Table 5 and Table 6, the total amount of the net electricity generation of the Project ($EG_{PJ,y}$) in this monitoring period is 82,428.486 MWh. Please refer to Table 7 for details.

Table 7. Net electricity generation of the Project (Unit: MWh)

Period	Electricity supplied by the Project to the grid	Electricity imported by the Project from the grid	Electricity imported via the 10 kV backup line	Net electricity generation of the Project
01/12/2009 ~ 31/12/2009	13,836.805	10.560	0	13,826.245
01/01/2010 ~ 30/06/2010	68,714.441	112.200	0	68,602.241
Total amount of net electricity generation in this monitoring period				82,428.486

For detailed calculation of the net electricity generation of the Project ($EG_{PJ,y}$), please refer to the emission reduction calculation spreadsheet.

Combined margin CO_2 emission factor ($EF_{grid,CM,y}$)

In the registered CDM-PDD (version 03), the combined margin emission factor ($EF_{grid,CM,y}$) is calculated as the weighted average of the operating margin emission factor ($EF_{grid,OM,y}$) and the build margin emission factor ($EF_{grid,BM,y}$).

Calculation of the operating margin emission factor ($EF_{grid,OM,y}$)

As per *Tool to calculate the emission factor for an electricity system* (version 02), referring to *China's Regional Grid Baseline Emission Factors* (renewed on 30/12/2008), the method (a) simple OM is employed for calculation of the operating margin emission factor(s) ($EF_{grid,OM,y}$) of the Project.

In the registered CDM-PDD (version 03), Option B (based on the total net electricity generation of all power plants serving the system and the fuel types and total fuel consumption of the electricity system) is adopted to calculate the simple operating margin emission factor ($EF_{grid,OMsimple,y}$). The formula of $EF_{grid,OMsimple,y}$ calculation is

$$EF_{grid,OMsimple,y} = \frac{\sum_i FC_{i,y} \times NCV_{i,y} \times EF_{CO2,i,y}}{EG_y} \quad (4)$$

$$EG_y = \sum_j GEN_{j,y} \times (1 - r_{j,y}) \quad (4-a)$$

Where:

$EF_{grid,OMsimple,y}$ is the simple operating margin emission factor in year y (tCO₂e/MWh);

$FC_{i,y}$ is the amount of fuel i consumed in North China Grid in year y (mass or volume unit);

$NCV_{i,y}$ is the net calorific value (energy content) of fuel i in year y (GJ/mass or volume unit);

$EF_{CO2,i,y}$ is the CO₂ emission factor of fuel i in year y (tCO₂e/GJ);

EG_y is the net electricity generated and delivered to the grid by all power sources serving the system, not including low-cost/must-run power plants/units, in year y (MWh);

i are all fuel types combusted in power sources in North China Grid in year y;

y is the relevant year as per the data vintage chosen in Step 3;

$GEN_{j,y}$ is total power generation of province j of North China Grid in year y;

$r_{j,y}$ is auxiliary electricity consumption rate of province j of North China Grid in year y.

In line with the registered CDM-PDD (version 03), the operating margin emission factor ($EF_{grid,OM,y}$) of North China Grid is 1.1169 tCO₂e/MWh.

Calculation of the build margin emission factor ($EF_{grid,BM,y}$)

In the registered CDM-PDD (version 03), the build margin emission factor ($EF_{grid,BM,y}$) is calculated according to *Tool to calculate the emission factor for an electricity system* (version 02) using equation (5):

$$EF_{grid,BM,y} = \frac{\sum_m EG_{m,y} \times EF_{EL,m,y}}{\sum_m EG_{m,y}} \quad (5)$$

Where:

$EF_{grid,BM,y}$ is the build margin emission factor in year y (tCO₂/MWh);

$EF_{EL,m,y}$ is the CO₂ emission factor of power unit m in year y (tCO₂e/MWh);

$EG_{m,y}$ is the net quantity of electricity generated and delivered to the grid by power unit m in year y (MWh);

m is the power units included in the build margin;

y is the most recent historical year for which power generation data are available.

$EF_{EL,m,y}$ is calculated according to Option A2 of Step 4(a) (Simple OM) in *Tool to calculate the emission factor for an electricity system* (version 02).

As the data of installed capacity can not be separated into coal fired, oil fired and gas fired currently, the build margin emission factor is calculated by the following steps and formulae:

Step a. Calculate the power generation emissions of solid fuel, liquid fuel and gas fuel and each share in the total emissions based on *Energy Balance Table* of the most recent year.

$$\lambda_{Coal,y} = \frac{\sum_{i \in COAL,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO2,i,j,y}}{\sum_{i,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO2,i,j,y}} \quad (6)$$

$$\lambda_{Oil,y} = \frac{\sum_{i \in OIL,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO2,i,j,y}}{\sum_{i,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO2,i,j,y}} \quad (7)$$

$$\lambda_{Gas,y} = \frac{\sum_{i \in GAS,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO2,i,j,y}}{\sum_{i,j} F_{i,j,y} \times NCV_{i,y} \times EF_{CO2,i,j,y}} \quad (8)$$

Where:

$F_{i,j,y}$ is the amount of fuel i (in a mass or volume unit) consumed by province j in year(s) y;

$NCV_{i,y}$ is the net calorific value (energy content) of fuel i in year y (GJ/mass or volume unit);

$EF_{CO2,i,y}$ is the CO₂ emission factor of fuel i in year y (tCO₂e/GJ).

COAL, OIL and GAS are footnote group for solid fuels, liquid fuels and gas fuels.

Step b. Calculate the emission factor for thermal power of the grid based on the result of Step a and the efficiency level of the best technology commercially available in China.

$$EF_{Thermal,y} = \lambda_{Coal,y} \times EF_{Coal,Adv,y} + \lambda_{Oil,y} \times EF_{Oil,Adv,y} + \lambda_{Gas,y} \times EF_{Gas,Adv,y} \quad (9)$$

$$EF_{Coal,Adv,y} = FC_{adv,coal} \times NCV_{coal,y} \times EF_{CO2,coal,y} \quad (9-a)$$

$$EF_{oil,Adv,y} = FC_{adv,oil} \times NCV_{oil,y} \times EF_{CO2,oil,y} \quad (9-b)$$

$$EF_{gas,Adv,y} = FC_{adv,gas} \times NCV_{gas,y} \times EF_{CO2,gas,y} \quad (9-c)$$

Where $EF_{coal,Adv,y}$, $EF_{oil,Adv,y}$ and $EF_{gas,Adv,y}$ are emission factor proxies of efficiency level of the best coal fired, oil fired and gas fired power generation technology commercially available in China.

Step c. Calculate the build margin emission factor of the grid based on the result of Step b and the share of thermal power of recent 20% capacity additions.

$$EF_{grid,BM,y} = \frac{CAP_{Thermal,y}}{CAP_{Total,y}} \times EF_{Thermal,y} \quad (10)$$

$$CAP_{total,y} = \sum_j CAP_{j,y} \quad (10-a)$$

Where:

$CAP_{Total,y}$ is total capacity additions that are close to and exceed 20% of existing capacity;

$CAP_{Thermal,y}$ is capacity additions of thermal power;

$CAP_{j,y}$ is total installed capacity of province j of North China Grid in year y.

In line with the registered CDM-PDD (version 03), the build margin emission factor ($EF_{grid,BM,y}$) of North China Grid is 0.8687 tCO₂e/MWh.

Calculation of the combined margin emission factor ($EF_{grid,CM,y}$)

Based on *Tool to calculate the emission factor for an electricity system* (version 02), the combined margin emission factor ($EF_{grid,CM,y}$) is calculated as the weighted average of the operating margin emission factor ($EF_{grid,OM,y}$) and the build margin emission factor ($EF_{grid,BM,y}$), as

$$EF_{grid,CM,y} = EF_{grid,OM,y} \times \omega_{OM} + EF_{grid,BM,y} \times \omega_{BM} \quad (11)$$

According to *Tool to calculate the emission factor for an electricity system* (version 02), the weight ω_{OM} is 0.75 and the weight ω_{BM} is 0.25 for wind power projects.

In line with the registered CDM-PDD (version 03) of the Project, the combined margin CO₂ emission factor ($EF_{grid,CM,y}$) is ex ante calculated and fixed as

$$EF_{grid,CM,y} = 0.75 \times 1.1169 + 0.25 \times 0.8687 = 1.05485 \text{ tCO}_2\text{e/MWh}.$$

Baseline emissions of the Project (BE_y)

According to formula (1), the total baseline emissions in this monitoring period are calculated as

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y} = 82,428.486 \times 1.05485 = 86,949 \text{ tCO}_2\text{e}.$$

Please refer to Table 8 for details.

Table 8. Calculation of baseline emissions of the Project

Period	Net electricity generation (MWh)	Baseline emission factor (tCO ₂ e/MWh)	Baseline emissions (tCO ₂ e)
01/12/2009 ~ 31/12/2009	13,826.245	1.05485	14,584
01/01/2010 ~ 30/06/2010	68,602.241	1.05485	72,365
Total baseline emissions in this monitoring period			86,949

E.2. Project emissions calculation

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As per the registered CDM-PDD (version 03), the Project is a wind power project and project emissions are not considered.

E.3. Leakage calculation

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As per the registered CDM-PDD (version 03), the leakage of the Project is not considered.

E.4. Emission reductions calculation / table

>>

In line with the registered CDM-PDD (version 03) of the Project, the emission reductions are calculated as:

$$ER_y = BE_y - PE_y \quad (12)$$

Please refer to Table 9 and Table 10 for respective calculation of the emission reductions of the Project in 2009 and 2010.

Table 9. Emission reductions of the Project from 01/12/2009 to 31/12/2009

Item	Data	Unit
Baseline emissions in 2009	14,584	tCO ₂ e
Project emissions in 2009	0	tCO ₂ e
Emission reductions in 2009	14,584	tCO ₂ e

Table 10. Emission reductions of the Project from 01/01/2010 to 30/06/2010

Item	Data	Unit
Baseline emissions in 2010	72,365	tCO ₂ e
Project emissions in 2010	0	tCO ₂ e
Emission reductions in 2010	72,365	tCO ₂ e

Calculation of the total emission reductions of the Project in this monitoring period is summarized in Table 11.

Table 11. Total emission reductions of the Project from 01/12/2009 to 30/06/2010

Item	Data	Unit
Total baseline emissions	86,949	tCO ₂ e
Total project emissions	0	tCO ₂ e
Total emission reductions	86,949	tCO ₂ e

As shown in Table 9, Table 10 and Table 11, the total emission reductions of the Project in this monitoring period is 86,949 tCO₂e, including the emission reductions in 2009 of 14,584 tCO₂e and the emission reductions in 2010 of 72,365 tCO₂e.

E.5. Comparison of actual emission reductions with estimates in the CDM-PDD

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Table 12. Comparison of actual emission reductions with the estimates in the registered CDM-PDD (version 03)

Item	Values applied in ex-ante calculation of the registered CDM-PDD	Actual values reached during the monitoring period
Emission reductions (tCO ₂ e)	71,816 ^[5]	86,949

As per Table 12, the actual emission reductions achieved by the Project from 01/12/2009 to 30/06/2010 are 21.07%^[6] higher than the estimates in the registered CDM-PDD (version 03).

^[5] The estimated value of annual emission reductions in the registered CDM-PDD (version 03) is 123,645 tCO₂e. This monitoring period is from 01/12/2009 to 30/06/2010, covering 212 days. Therefore, the estimated value of emission reductions corresponding to this monitoring period (212 days) is calculated as 123,645/365×212=71,816 tCO₂e.

^[6] Calculated as (86,949-71,816)/71,816=21.07%.

E.6. Remarks on difference from estimated value in the CDM-PDD

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As described in Section E.5, the actual emission reductions achieved by the Project in this monitoring period are 21.07% higher than the estimates in the registered CDM-PDD (version 03). This difference is mainly caused by the high wind speed during this monitoring period.

This monitoring period is from 01/12/2009 to 30/06/2010. Since this monitoring period is less than one year, it is unreasonable to compare the actual emission reductions during this monitoring period with the estimated annual emission reductions in the registered CDM-PDD (version 03).

However, further clarification still provided as follows.

As per the FSR of the Project, the wind speed at the Project Site is higher during winters and springs and lower during summers and autumns. According to the FSR, the monthly average wind speed at 70 m height based on historical wind speed data is shown in Table 13 and Figure 3.

Table 13. Historical monthly average wind speed

Month	1	2	3	4	5	6	7	8	9	10	11	12
Monthly average wind speed (m/s)	5.9	8.0	8.5	8.1	9.2	7.4	6.7	5.7	6.3	7.7	8.3	7.4

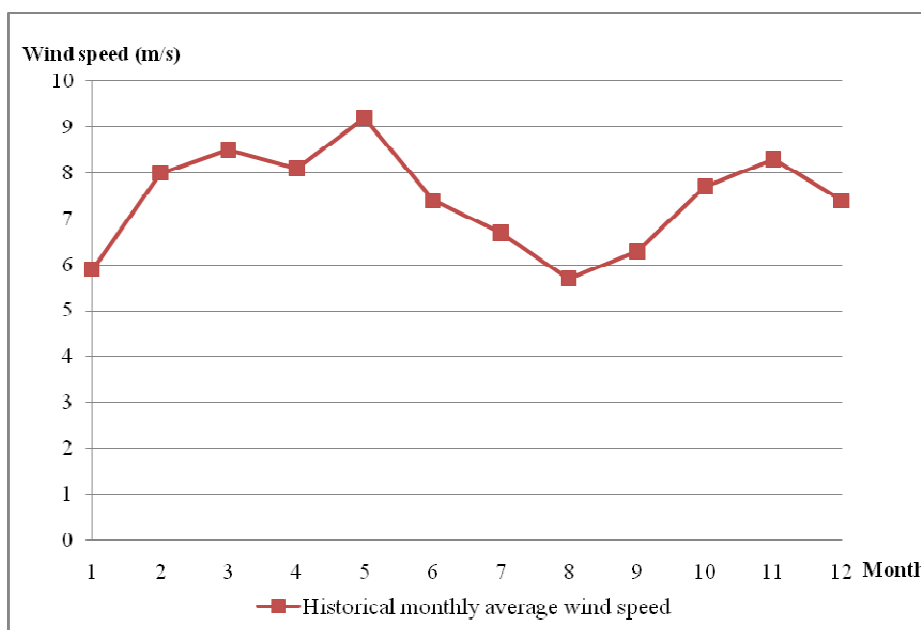


Figure 3. The fluctuation of historical monthly average wind speed

Based on Table 13 and Figure 3, it can be concluded that the wind speed at the Project Site is higher during winters and springs and lower during summers and autumns. This conclusion is consistent with the wind measurement result in the FSR.

Moreover, according to the actual wind speed data, the monthly average wind speed between 01/12/2009 and 30/06/2010 is shown in Table 14.

Table 14. Actual monthly average wind speed

Month	2009-12	2010-01	2010-02	2010-03	2010-04	2010-05	2010-06
Monthly average	7.69	7.65	6.05	8.09	8.12	8.05	6.01

wind speed (m/s)							
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Comparison between the historical monthly average wind speed and the actual monthly average wind speed is shown in Figure 4.



Figure 4. Comparison between the historical monthly average wind speed and the actual monthly average wind speed

As shown in Figure 4, the fluctuation trend of the actual monthly average wind speed is consistent with that of the historical monthly average wind speed provided in the FSR. Therefore, it can be demonstrated that the wind speed at the Project Site is higher during winters and springs and lower during summers and autumns.

Therefore, since this monitoring period is from 01/12/2009 to 30/06/2010 (covering the winter of 2009 and the spring of 2010), it is reasonable that the amount of emission reductions in this monitoring period is higher than the estimated value in the in the registered CDM-PDD (version 03).

SECTION F. Clarification of clauses 1.12, 1.13, 1.14, 8.1 and 8.2 of the VCS PD template

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The Project was registered as a CDM project on 03/07/2010 (reference number: 3356). As per *Further Guidance for Projects that are Registered in Two GHG Programs* published on 19/03/2008:

“Projects registered under other VCS Program approved GHG Programs (such as the CDM) are eligible to create Voluntary Carbon Units (VCUs) for the emissions reductions or removals not registered under that GHG Program.

...

For example, when a project has been validated under the CDM, a further validation shall be completed of clauses 1.12, 1.13, 1.14, 8.1 and 8.2 of the VCS Project Description template (<http://v-c-s.org/docs/VCS%20PD.doc>). This validation can be completed when the Project Proponent undergoes a VCS Program verification of achieved emissions reductions or removals.”

Therefore only clauses 1.12, 1.13, 1.14, 8.1 and 8.2 of the VCS Project Description template are filled as below.

1.12 Demonstration to confirm that the project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction.

As described in the registered CDM-PDD (version 03), “the Project is a grid-connected renewable power generation project activity that installs a new power plant at a site where no renewable power plant was operated prior to the implementation of the project activity.” As a wind power project, the Project generates emission reductions by avoiding CO₂ emissions from the same amount of electricity generation from North China Grid, which is mainly composed of traditional thermal power plants. Therefore, the Project was not implemented to create GHG emissions primarily for the purpose of its subsequent removal or destruction.

1.13 Demonstration that the project has not created another form of environmental credit (for example renewable energy certificates).

The Project was registered as a CDM project on 03/07/2010. As per CDM rules, emission reduction credits generated by the Project prior to 03/07/2010 can not be claimed as CERs. The Project Owner expects to claim these emission reduction credits as VCUs and will not apply for other environmental credits.

1.14 Project rejected under other GHG programs (if applicable):

Prior to the application for issuance of VCUs, only CDM development was implemented for the Project. The Project was registered as a CDM project on 03/07/2010. And the Project has not been rejected by other GHG programs.

8.1 Proof of Title:

Letter of Approval issued by China's DNA for the Project can be the proof of title of the Project Owner. As described in Letter of Approval, Construction Investment Yanshan (Guyuan) Wind Energy Co., Ltd. is authorized as China's participant to voluntarily participate in and carry out the Project. Letter of Approval issued by China's DNA for the Project can be found at:

<http://cdm.unfccc.int/UserManagement/FileStorage/K6RYL2HPZ7913XJWMCFUA0VN8EGD5O>.

The Project Owner has also obtained all relevant permits for to the Project including Business License, FSR Approval and Power Purchase Agreement. Moreover, the ownership of the Project Owner has been described in the registered CDM-PDD (version 03), which has been validated by Bureau Veritas Certification. The validation report issued by Bureau Veritas Certification can be found at:

<http://cdm.unfccc.int/UserManagement/FileStorage/GJUD586H3OW29I1KSVL47YNMEPTACB>.

8.2 Projects that reduce GHG emissions from activities that participate in an emissions trading program (if applicable):

The Project does not reduce GHG emissions from activities that are included in an emissions trading program or take place in a jurisdiction or sector in which binding limits are established on GHG emissions. So this clause is not applicable.