

Monitoring Report

Version 1.0

(Date: 22 January 2010)

The Fifth Monitoring Period:

Start monitoring period: 1 Jan 2009

End monitoring period: 31 Dec 2009

Title: Chengde Hongsong Windfarm Project

Project Parties:

Hebei Hong-Song Wind Power Share Holding Ltd.

Carbon Resource Management Ltd.

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1. Introduction

This Monitoring Report is based on THE VOLUNTARY CARBON STANDARD 2007.1. The purpose of this Monitoring Report is to calculate the emission reductions achieved by the project activity in the period covered by this report, and to serve as the basis for the verification of these reductions and issuance of the VCUs.

1.1 Monitoring period

This monitoring period: 1 Jan 2009 to 31 Dec 2009

1.2 Verification standard applied

This Monitoring Report is based on the Voluntary Carbon Standard 2007.1.

2. Project description

2.1 Title

Chengde Hongsong Windfarm Project

2.2 Project summary

The project consists of the installation of 84 turbines, providing a total capacity of 51.3MW. The Chengde Hongsong Windfarm is located in the north of Weichang County, Chengde City in Hebei Province, in the People's Republic of China. The city of Chengde lies about 230 kilometres from Beijing. It is located at longitude 117°40' East and latitude 42°35' North. Average altitude of the site is approximately 1800m above mean sea level.

2.3 Category of project activity

Using the agreed methodology ACM0002 the category of the project activity is:

- Sectoral scope 1: Energy industries
- Category: Renewable electricity generation in grid connected applications

2.4 Public funding and grants

No public funding or official development assistance has been employed in the project activity.

2.5 Project Boundary / GHG Assessment Boundary

The project activity of wind farm and North China Power Grid are selected as the project boundary.

2.6 Secondary Effects and Leakage

As is demonstrated in the PDD, there is no leakage for this wind farm project.

3 Project timeline

Starting date of the project activity	September 2004
Crediting period	Single 10 year crediting period
Starting date of crediting period	1 January 2005
End date of crediting period	31 December 2014
The first monitoring period	1 Jan 2005-31 Aug 2006
The second monitoring period	1 Sep 2006-31 Dec 2006
The third monitoring period	1 Jan 2007-31 Dec 2007
The fourth monitoring period	1 Jan 2008-31 Dec 2008
The fifth monitoring period	1 Jan 2009-31 Dec 2009

4 Baseline

4.1 Methodology

The project participants used the approved baseline and monitoring methodology ACM0002 (version 6) "Consolidated baseline methodology for grid-connected electricity generation from renewable sources".

Using ACM0002, the emission reductions achieved by the project activity can be calculated by multiplying the net electricity supplied to the grid and the appropriate emissions factor of the grid.

4.2 Calculations

The emission reductions ER_y by the project activity during a given year y is

$$ER_y = BE_y - EG_y * EF_y$$

where EGy is the net electricity supplied to the grid, EFy is the CO₂ emission factor of the grid and BEy is the baseline emissions.

The emission factor EFy of the grid is represented as a combination of the Operating Margin and the Build Margin, and fixed for the duration of the crediting period in the PDD.

The Operating Margin emission factor EF_OMy was calculated in the PDD as 0.984 tCO₂e/MWh. The Build Margin emission factor EF_BMy was calculated as 0.859tCO₂e/MWh. The weighted average of Operating and Build Margin emission factors is:

$$EF = wOM * EFOM + wBM * EFBM = 0.75 * 0.984 + 0.25 * 0.859 = 0.952 \text{tCO}_2/\text{MWh}$$

5 Monitoring Process

5.1 Monitored data

As the emissions factor is fixed for the whole period, the monitored data for the project activity only includes the net electricity generation from the windfarm.

ID	Variable	Source of data
1	EG: net electricity supplied to the grid	Electricity meters i.e. exports minus imports, Es- Ei.

5.2 Baseline data

5.2.1 EG: net electricity supplied to the grid

Table 1 EG: net electricity supply to the grid by the project

	Es(kWh)	Ei(kWh)	EG(MWh)	Load factor
Jan-09	15154458	24222	15130.236	39.71%
Feb-09	13952532	14190	13938.342	40.47%
Mar-09	14001900	12672	13989.228	36.69%
Apr-09	7133016	11220	7121.796	19.31%
May-09	10179114	7722	10171.392	26.67%
Jun-09	9044838	7788	9037.05	24.49%
Jul-09	3886674	28380	3858.294	10.18%
Aug-09	4331976	20724	4311.252	11.35%
Sep-09	7272804	10362	7262.442	19.69%
Oct-09	9456480	11022	9445.458	24.78%
Nov-09	15373974	12276	15361.698	41.62%
Dec-09	15172080	1320	15170.76	39.75%
Total	124959846	161898	124797.948	*27.81%

*Load factor of the project in this VCU's claimed period is 27.81%(124959.846/51.3/365/24) ,and it was

within the allowable range comparing with the designed value (24.41%), due to abundant wind resource in this monitoring period.

6 Quality assurance and quality control measures

6.1 Roles and responsibilities

Overall responsibility for monitoring and carrying out the monitoring following this monitoring plan lies with the Chengde Hong-Song Wind Power Share Holding Ltd.

Mr. Li Zongli is responsible for the monitoring and report;

Mr. He Zhiyuan is responsible for the VER data collection and internal auditing.

6.2 Training

Carbon Resource Management has advised the project developer on monitoring work.

6.3 Calibrations

The net electricity supplied to the grid in the monitoring period will base on the main meters, Hongsong 101 meter and Hongsong 102 meter, installed in windfarm substation and the backup meter in the substation of the North China Power Grid is an assistant one. Calibrations have been carried out by Energy Metering Center of Chengde City Power Supply Company, the valid period of Calibration Certificates, i.e. one year, covers this monitoring period. The metering equipment is calibrated and checked annually for accuracy. The detailed calibration information is listed as follows:

Table 2 Information on calibration

Meter	Accuracy	Number	Calibration on	
The 101 Meter	0.5	200304124D0138	16/07/2008	12/07/2009
The 102 Meter	0.5	200204092D0132	16/07/2008	16/04/2009
Backup Meter	0.5	0502634	13/08/2008	22/07/2009

7 Emission reduction calculations

7.1 Project emissions

As a renewable energy project, project emissions are zero.

7.2 Baseline emissions

Table 3 Baseline emissions

	EG(MWh)	EF(tCO₂/MWh)	BE(tCO₂)
Jan-09	15130.236	0.952	14403.98
Feb-09	13938.342	0.952	13269.30
Mar-09	13989.228	0.952	13317.75
Apr-09	7121.796	0.952	6779.95
May-09	10171.392	0.952	9683.17
Jun-09	9037.05	0.952	8603.27
Jul-09	3858.294	0.952	3673.10
Aug-09	4311.252	0.952	4104.31
Sep-09	7262.442	0.952	6913.84
Oct-09	9445.458	0.952	8992.08
Nov-09	15361.698	0.952	14624.34
Dec-09	15170.76	0.952	14442.56
Total	124797.948	0.952	118807.65

7.3 Leakage emissions

As a relatively small renewable energy project, leakage from the project are considered zero.

7.4 Summary of emission reductions during the monitoring period

Table 4 below shows the summary of emissions and emission reductions. It also shows that the total reductions claimed are rounded down to the last whole tonne.

Table 4 Emission reduction calculation (tCO₂e)

	Project Emissions (tCO₂e)	Baseline Emissions (tCO₂e)	Leakage Emissions (tCO₂e)	Emission Reductions (tCO₂e)
Jan-09	0	14403.98	0	14403.98
Feb-09	0	13269.30	0	13269.30
Mar-09	0	13317.75	0	13317.75
Apr-09	0	6779.95	0	6779.95
May-09	0	9683.17	0	9683.17
Jun-09	0	8603.27	0	8603.27
Jul-09	0	3673.10	0	3673.10
Aug-09	0	4104.31	0	4104.31
Sep-09	0	6913.84	0	6913.84
Oct-09	0	8992.08	0	8992.08
Nov-09	0	14624.34	0	14624.34
Dec-09	0	14442.56	0	14442.56
Total	0	118807.65	0	118807.65

The total emission reduction for the whole fifth monitoring period is 118807 tCO₂e.

Annex 1 Clarification of clauses 1.12, 1.13, 1.14, 8.1 and 8.2 of the VCS PDD

The proposed project has been validated and verified for the 1st monitoring period under the draft Voluntary Carbon Standard (VCS) version 2 in Jan 2007 by an accredited validator and verifier (DNV). As the VCS2007.1 came into force on 18 November 2008, this fifth monitoring period shall be verified against the VCS2007.1 in terms of the VCS 2007.1. This clarification is annexed to cover all the requirements set out in the VCS2007.1 for project validation together with the validated PDD (version 1.2, dated 21 December 2006), according to the Policy Announcement from the VCS Association. (<http://www.v-c-s.org/documents.html>)

Clarification of clauses 1.12, 1.13, 1.14, 8.1 and 8.2 of the VCS PDD are as follows:

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.

Clarification: As a wind energy project, the proposed project will produce clean electricity using wind power resources and will generate GHG emission reductions by avoiding CO₂ emissions from electricity generation of fossil fuel fired power. Operation of this project does not lead to GHG emissions. It is confirmed that 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).

Clarification: The project is located in China and is developed and operated by Hebei Hong-Song Wind Power Share Holding Ltd. There is no other environmental credit (for example renewable energy certificate) which has or will be produced by or obtained for the project.

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

Clarification: The project has not registered under any other GHG program and has only been registered under VCS program without rejection.

8.1 Proof of Title:

Clarification: Evidence of proof of title has been demonstrated via documentation proving ownership of the plant and equipment at the site. The owner has also obtained all relevant permits for to the proposed project including a Business License, FSR (Feasibility Study Report) approval, EIA approval and PPA. The project's design and implementation has been carried out in compliance with all relevant and national legislation in China.

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

The proposed project is not included in an emissions trading program, and does not take place in a jurisdiction or sector in which binding limits are established on GHG emissions. The proposed project does not reduce GHG emissions from activities that participate in an emissions trading program, so this clause is not applicable.