

Monitoring Report

Version 1.0

The Third Monitoring Period:

Start monitoring period: 1 Jan 2007

End monitoring period: 31 Dec 2007

Title: Chengde Hongsong Windfarm Project

Project developer:

Hebei Hong-Song Wind Power Share Holding Ltd.

Project advisor:
Carbon Resource Management

Verifier:
DNV

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1 Introduction

This Monitoring Report is based on THE VOLUNTARY CARBON STANDARD Version 1, and 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 2007 to 31 Dec 2007

2 Project description

2.1 Title

Chengde Hongsong Windfarm Project

2.3 Project summary

The Chengde Hongsong Windfarm Project is located in Hebei Province, China. The project consists of the installation of 84 turbines: 78 turbines of 600 kW, and 6 turbines of 750 kW capacity, providing a total of 51.3MW. The project is expected to generate some 104GWh per year once fully operational which will be exported to the North China Power Grid.

A more detailed description is available in the PDD and related documentation.

2.4 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

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
This monitoring period	1 Jan 2007-31 Dec 2007

4 Baseline

4.1 Methodology

The project participants use 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

$$ER_y = BE_y - EG_y \cdot EF_y$$

where EG_y is the net electricity supplied to the grid, EF_y is the CO₂ emission factor of the grid and BE_y is the baseline emissions.

The emission factor EF_y 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 0.992 tCO₂e/MWh. The Build Margin emission factor EF_{BMy} was calculated as 0.861 tCO₂e/MWh. The weighted average of Operating and Build Margin emission factors is:

$$EF = w_{OM} \cdot EF_{OM} + w_{BM} \cdot EF_{BM} = 0.75 \cdot 0.984 + 0.25 \cdot 0.859 = 0.952 \text{ tCO}_2/\text{MWh}$$

5 Monitoring methodology and plan

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 meter i.e. exports minus imports,

		Es- Ei.
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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 (MWh)

	Es(MWh)	Ei(MWh)	EG(MWh)
Jan-07	14143	27	14116
Feb-07	13314	6	13308
Mar-07	10519	19	10500
Apr-07	10028	12	10016
May-07	10118	7	10111
Jun-07	3124	29	3095
Jul-07	2240	34	2206
Aug-07	3887	32	3855
Sep-07	2762	33	2729
Oct-07	9922	24	9898
Nov-07	12844	9	12835
Dec-07	13762	16	13746
Total	106663	248	106415

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 meter installed in windfarm substation, and the backup meter in the substation of the North China Power Grid is an assistant one. The metering equipment are calibrated and checked annually for accuracy. The metering equipment shall have sufficient accuracy so that any error resulting from such equipment shall not exceed 0.5% of full-scale rating. The net energy output registered by the meters alone will suffice for

the purpose of billing and emission reduction verification as long as the error in the meters is within the agreed limits.

Calibration is carried out by the North China Power Grid of Chengde Electric Power Company with the records being supplied to Chengde Hongsong Wind Farm, and these records will be maintained by Hebei Hong-Song Wind Power Share Holding Ltd.

All the meters installed shall be tested by North China Power Grid within 10 days after:

- the detection of a difference larger than the allowable error in the readings of both meters;
- the repair of all or part of meter caused by the failure of one or more parts to operated in accordance with the specifications; and/or

If any errors are detected the party owning the meter shall repair, recalibrate or replace the meter giving the other party sufficient notice to allow a representative to attend during any corrective activity.

7 Emission reduction calculations

7.1 Project emissions

As a renewable energy project, project emissions are zero.

7.2 Baseline emissions

Table 2 Baseline emissions

	EG(MWh)	EF(tCO ₂ /MWh)	BE(tCO ₂)
Jan-07	14116	0.952	13438
Feb-07	13308	0.952	12669
Mar-07	10500	0.952	9996
Apr-07	10016	0.952	9535
May-07	10111	0.952	9626
Jun-07	3095	0.952	2946
Jul-07	2206	0.952	2100
Aug-07	3855	0.952	3670
Sep-07	2729	0.952	2598
Oct-07	9898	0.952	9423
Nov-07	12835	0.952	12219
Dec-07	13746	0.952	13086
Total	106415	0.952	101307

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 3 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 3 Emission reduction calculation (tCO₂e)

	Project Emissions (tCO₂e)	Baseline Emissions (tCO₂e)	Leakage Emissions (tCO₂e)	Emission Reductions (tCO₂e)
Jan-07	0	13438	0	13438
Feb-07	0	12669	0	12669
Mar-07	0	9996	0	9996
Apr-07	0	9535	0	9535
May-07	0	9626	0	9626
Jun-07	0	2946	0	2946
Jul-07	0	2100	0	2100
Aug-07	0	3670	0	3670
Sep-07	0	2598	0	2598
Oct-07	0	9423	0	9423
Nov-07	0	12219	0	12219
Dec-07	0	13086	0	13086
Total	0	101306	0	101306

The total emission reductions for the whole first monitoring period are 101,306 tCO₂e.