

Monitoring Report

Version 1.0

The Forth Monitoring Period:

Start monitoring period: 1 Jan 2008

End monitoring period: 31 Dec 2008

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

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 2008 to 31 Dec 2008

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, providing a total capacity of 51.3MW.

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
The third monitoring period	1 Jan 2007-31 Dec 2007
This monitoring period	1 Jan 2008-31 Dec 2008

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 CO_2 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, $E_s - E_i$.

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(kWh)	Ei(kWh)	EG(MWh)
Jan-08	12134958	19866	12115.092
Feb-08	13481094	5676	13475.418
Mar-08	11376948	9504	11367.444
Apr-08	8153178	16500	8136.678
May-08	11332398	13992	11318.406
Jun-08	2870142	28644	2841.498
Jul-08	2712138	33990	2678.148
Aug-08	3487242	28644	3458.598
Sep-08	6738204	16830	6721.374
Oct-08	11665764	12408	11653.356
Nov-08	17009190	5082	17004.108
Dec-08	19509864	14454	19495.41
Total	120471120	205590	120265.53

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 were calibrated and checked annually for accuracy.

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-08	12115.092	0.952	11533.57
Feb-08	13475.418	0.952	12828.6
Mar-08	11367.444	0.952	10821.81
Apr-08	8136.678	0.952	7746.117
May-08	11318.406	0.952	10775.12
Jun-08	2841.498	0.952	2705.106
Jul-08	2678.148	0.952	2549.597
Aug-08	3458.598	0.952	3292.585
Sep-08	6721.374	0.952	6398.748
Oct-08	11653.356	0.952	11093.99
Nov-08	17004.108	0.952	16187.91
Dec-08	19495.41	0.952	18559.63
Total	120265.53	0.952	114492.8

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 (tCO ₂ e)	Baseline Emissions (tCO ₂ e)	Leakage Emissions (tCO ₂ e)	Emission Reductions (tCO ₂ e)
Jan-08	0	11533.57	0	11533.57
Feb-08	0	12828.6	0	12828.6
Mar-08	0	10821.81	0	10821.81
Apr-08	0	7746.117	0	7746.117
May-08	0	10775.12	0	10775.12
Jun-08	0	2705.106	0	2705.106
Jul-08	0	2549.597	0	2549.597
Aug-08	0	3292.585	0	3292.585
Sep-08	0	6398.748	0	6398.748
Oct-08	0	11093.99	0	11093.99
Nov-08	0	16187.91	0	16187.91
Dec-08	0	18559.63	0	18559.63
Total	0	114492.8	0	114492.8

The total emission reduction for the whole forth monitoring period is 114492 tCO₂e.