# MONITORING REPORT

# Jilin Taonan Wind Power Project (CDM Registration Reference No. 0599)

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Monitoring Period:

Start Date: December 1st, 2006

End Date: November 24th, 2007

Version 3

Date of Report: February 8th, 2008

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# **1** INTRODUCTION

This document reports the emission reductions generated by the Jilin Taonan Wind Power Project, CDM registration reference number 0599, in the following monitoring period:

December 1<sup>st</sup>, 2006 to November 24<sup>th</sup>, 2007 This is the second monitoring period, and it continued from the last one.

## 2 GENERAL DESCRIPTION OF THE PROJECT

## 2.1 SHORT DESCRIPTION OF THE PROJECT ACTIVITY

General introduction

The proposed project has a capacity of 49.3MW and is sited in Taonan, Jilin Province, China. The project is designed to produce 103,216 MWh of electricity per year from wind generation, replacing fossil fuel consumption and thus reducing greenhouse gas (CO<sub>2</sub>) emissions.

The project activity started from August 4, 2004.

The proposed project activity contributes to both local and global sustainable development by reducing pollutants, promoting local employment, stimulating and accelerating renewable energy development in China from a broaden perspective.

#### Technology employed by the project activity

The project consists of 58 units of Gamesa G58 turbines with a unit capacity of 850kW. A 66 kV substation has been set up and the total capacity of transformers is 2 x 31500 kVA. With the establishment of a 37km transmission line, the power produced in the wind farm can be easily transmitted to the 220kV transformer substation in Baicheng from which point it will be connected to the North East Power Grid.

## 2.2 GEOGRAPHIC LOCATION

The Jilin Taonan Wind Power Project is located in Jilin Province, North East China. The proposed specific project location is, 30km Northwest of Taonan City in the Baicheng District, which is in the northwest of Jilin province, and to the east of Ke'erqin Grassland.

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# 3 MONITORING METHODOLOGY AND PLAN

# 3.1 BASELINE METHODOLOGY

The approved consolidated baseline methodology ACM0002 - Version 6: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources"<sup>1</sup> is used for the Taonan wind project for calculating the baseline emissions and project additionality.

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## 3.2 MONITORING METHODOLOGY

The project has implemented the monitoring methodology of ACM0002 - Version 6: "Consolidated monitoring methodology for zero-emissions grid-connected electricity generation from renewable sources". The methodology requires monitoring of the following:

Ø Net electricity generation from the proposed project activity

ID	Data variable	Data unit	Measured (m), calculated (c), estimated (e),	Recording frequency	Proportion of data to be monitored	How will the data be archived? (electronic/ paper)
EGy	Electricity supplied to the grid by the project	MWh	Μ	Continual measurem ent and monthly recording	100%	Electronic and paper backup. Data shall be archived for 2 years following the end of the crediting period.

# 4 QUALITY CONTROL (QC) AND QUALITY ASSURANCE (QA)

# 4.1 QA/QC PROCEDURES

ID	Uncertainty level of data (High/Medium/Low)	Explain QA/QC procedures planned for these data, or why such procedures are not necessary.
EGy	Low	The net MWh generated by the project and supplied to the grid has been monitored continuously by an on-site power meter. In addition, a second, back up meter will be installed in case there is a failure of the first meter. Power generated and supplied is monitored continuously and will be recorded on a daily basis and aggregated into monthly totals. The project operator is responsible for recording this set of data. The meters has been maintained by the Local Grid Company and calibrated at least once per year. Calibration certificates of the meter(s) used to calculate the ERs generated will be made available to the verifier. <u>Meter readings have been routinely double checked with sales receipts on a monthly basis.</u> <u>Those sales receipts will also be available as an</u> additional check. This data set will be provided by the project company from its normal recording system.

## 4.2 ROLES AND RESPONSIBILITIES

The person with overall responsibility for CDM is the CDM Project Officer, Mr. Gao Zhen. The procedures for the CDM Management were outlined in the CDM Monitoring Plan.

## 5 EMISSIONS REDUCTION CALCULATION FOR THE PROJECT

According to the methodology: ERy = BEy - PEy - Ly

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### 5.1 PROJECT EMISSIONS

According to ACM0002 (Version 06), Project Emissions are given as:

$$PE_{y} = \sum_{i} Q_{i} \times NCV_{i} \times EF_{i} \times \frac{44}{12} \times OXID_{i}$$

where:

PEy	- Project emissions in year y (tCO <sub>2</sub> )
Qi	- Mass or volume unit of fuel i consumed (t or m <sup>3</sup> )
NCV <sub>i</sub>	- Net calorific value per mass or volume unit of fuel i (TJ/t or m <sup>3</sup> )
EFi	- Carbon emissions factor per unit of energy of the fuel i (tC/TJ)
OXID <sub>i</sub>	- Oxidation factor of the fuel i (%)

Since there is no auxiliary fuel consumed in the project, therefore the project activity does not have any GHG emissions. PEy = 0

### 5.2 LEAKAGE EMISSIONS

According to the ACM0002 (Version 06), when the baseline scenario is grid power imports, no leakage needs to be considered. According to the ACM0002 the main emissions potentially giving rise to leakage in the context of electric sector projects are emissions arising due to activities such as power plant construction, fuel handling, and land inundation. Project participants do not need to consider these emission sources as leakage in applying the methodology.

Leakage is therefore zero.

### 5.3 BASELINE EMISSIONS

Baseline emissions are given as:

 $BE_{electricity} = EGy \times EFy$ 

where:

**EGy** is the net quantity of electricity supplied to the grid by the project during the year y in MWh, and

**EFy** is the  $CO_2$  baseline emission factor for the electricity displaced due to the project activity during the year y (t $CO_2/MWh$ ). The grid emissions factor is determined according to ACM0002 Version 6 and fixed ex-ante for the duration of the crediting period. The specific grid emissions factor applied for the first crediting period of the Jilin

Taonan Wind Power Project is 0.929 tCO<sub>2</sub>e/MWh (See registered PDD available online at <u>http://cdm.unfccc.int/Projects/DB/DNV-CUK1158906995.23/view.html</u>).

#### Net Output Power Transmitted to the Grid from Project Activity

Period	Date Start End		Power Generated (KWh) A	Power imported for operating wind turbines, office operation and other activities (KWh)	Net Power transmitted to the Grid (KWh)
				В	C = A - B
December-06	1-Dec-06	31-Dec-06	5,850,000	63,360	5,786,64
January-07	1-Jan-07	31-Jan-07	4,660,000	69,696	4,590,30
February-07	1-Feb-07	24-Feb-07	9,110,000	27,720	9,082,28
March-07	25-Feb-07	24-Mar-07	11,790,000	29,304	11,760,69
April-07	25-Mar-07	24-Apr-07	10,760,000	11,088	10,748,91
May-07	25-Apr-07	24-May-07	14,450,000	792	14,449,20
June-07	25-May-07	24-Jun-07	7,770,000	1,584	7,768,41
July-07	25-Jun-07	24-Jul-07	4,750,000	9,504	4,740,49
August-07	25-Jul-07	24-Aug-07	5,560,000	39,600	5,520,40
September-07	25-Aug-07	24-Sep-07	4,890,000	29,304	4,860,69
October-07	25-Sep-07	24-Oct-07	10,140,000	8,712	10,131,28
November-07	25-Oct-07	24-Nov-07	11,280,000	31,680	11,248,32
sum			101,010,000	322,344	100,687,65

According to the above table, Net Output Power Transmitted to the Grid is 100,687,656 kWh. Therefore, baseline emissions are:

BE electricity, = EGy × EFy = 100,687,656 kWh / 1000 \* 0.929 = 93,539 tCO<sub>2</sub>.

Please be noted there was a change since February of 2008 about the electricity transaction period between the project owner and Jilin Power Grid Electricity Transaction Center, the power purchaser, Following this change, the start date of each month was changed from 1<sup>st</sup> to 25<sup>th</sup>, while the end date was changed from the end of each month to 24<sup>th</sup> of each month.

## 5.4 EMISSION REDUCTIONS

The emission reduction, ERy, by the project activity during a given year y is the difference between the baseline emissions (BEy) and project emissions (PEy), as follows:

ERy = BEy - PEy

where:

Period	
	Star
December-06	25-Nov-
January-07	25-Dec-
February-07	25-Jan-(
March-07	25-Feb-
April-07	25-Mar-
May-07	25-Apr-(
June-07	25-May-
July-07	25-Jun-(
August-07	25-Jul-0
September-07	25-Aug-
October-07	25-Sep-
November-07	25-Oct-(

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Deleted: Please be noted Version 2 of this monitoring report corrects a type mistake in the operation records. In Version 1, the power imported for operating wind turbines, office operation and other activities (Column B in the above table) for April of 2007 was entered as 11,880 kWh, but the correct figure should be 11,088 kWh. The verifier found out the wrong number by checking the power purchase receipts, and therefore the mistake was corrected in this version.

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Deleted: Although the end date of monitoring period in last monitoring report is November 30 of 2006, the emission calculation was based on the data collected until 24:00 of November 24<sup>th</sup> of 2006, which was the date of monthly transaction between the project owner and the power purchaser. This can be verified by checking the reading records of the gateway meter, Electricity Transaction Notes (ETNs), and the power sales receipts for the last monitoring period.¶

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ERy are the emissions reductions of the project activity during the year y in tons of  $CO_2$ , PEy are the project emissions during the year y in tons of  $CO_2$ , and BEy are the baseline emissions due to displacement of electricity from power plants connected to the North East Power Grid during the year y in tons of  $CO_2$ 

Therefore, Emission reduction generated in the monitoring period (December 1, 2006 – November 24, 2007)

ERy = BEy - PEy = EGy × EFy = 100,687,656 kWh / 1000 \* 0.929 = 93,539 tCO<sub>2</sub>.

Following person with signature below will confirm the Monitoring Report of Jilin Taonan Wind Power Project on behalf of:

#### Datang Jilin Wind Power Stockholding Co., Ltd.



Mr. Gao Zhen

Vice-General Manager

Datang Jilin Wind Power Stockholding Co., Ltd.

Date: February 2008

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