

GUOHUA WULATE ZHONGQI CHUANJING PHASE II WIND FARM PROJECT

Document Prepared By Guohua Bayannaoer (Wulate Zhongqi) Wind Power Co., Ltd.

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Prepared By	Li Jia
Contact	Address: Chuanjing Windfarm, Wulate Zhongqi, Bayannaoer, Inner Mongolia, China Telephone: +86-10-58151713 Email: Lijia@guohua.com.cn

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1 PROJECT DETAILS

1.1 Summary Description of Project

Guohua Wulate Zhongqi Chuanjing Phase II Wind Farm Project (hereinafter referred to as “the Project”) is located in Wulate Zhongqi, Bayannaoer City, Inner Mongolia Autonomous Region, P.R. China. The total installed capacity of the Project is 49.5MW with 33 sets of turbines and a unit capacity of 1,500kW.

The objective of the Project is to utilize the wind power for generating electricity which is sold into the North China Power Grid (NCPG). The estimated on-grid electricity supply to the NCPG is 129,580 MWh/year, reduce emissions of greenhouse gas by replacing the electricity from the NCPG.

The starting date of the construction was 12/06/2009. The first turbine started operation on 22/11/2009. All the turbines were operation on 15/12/2009.

This VCS monitoring period covered the time from 01/12/2009 to 31/12/2010. From 01/12/2009 to 31/12/2009, the emission reductions is 5,642 tCO₂e, the emission reductions from 01/01/2010 to 31/12/2010 is 108,208tCO₂e, the total emission reductions achieved during this VCS monitoring period is 113,850tCO₂e.

1.2 Sectoral Scope and Project Type

Sectoral Scope 1: Energy industries (Renewable Energy).

It is to generate zero-emission wind power and not a grouped project.

1.3 Project Proponent

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)
People's Republic of China (host)	Guohua Bayannaoer (Wulate Zhongqi) Wind Power Co., Ltd.	No

Li Jia, Project Manager

Guohua Bayannaoer (Wulate Zhongqi) Wind Power Co., Ltd.

Tel: +86-10-58151713, Fax: +86-10-58151705, Email: lijia@guohua.com.cn

1.4 Other Entities Involved in the Project

N/A

1.5 Project Start Date

22/11/2009

1.6 Project Crediting Period

A CDM crediting period of 7 (seven) years (renewable twice) was selected for the Project activity. The first CDM crediting period is from 05/01/2011 to 04/01/2018.

The VCS crediting period of the Project is from 01/12/2009 to 31/12/2010. Obviously, no overlapping periods exists between the VCS crediting period and the CDM crediting period.

1.7 Project Location

The Project is located in the Wulate Zhongqi, Bayannaoer City, Inner Mongolia Autonomous Region, People's Republic of China. The central geographic coordinates of the Project location are north latitude 41°33'54'' and east longitude 108°31'31''.

1.8 Title and Reference of Methodology

The approved consolidated baseline and monitoring methodology ACM0002 "Consolidated methodology for grid-connected electricity generation from renewable sources", Version 11.

<http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html>

2 IMPLEMENTATION STATUS

2.1 Implementation Status of the Project Activity

The Project involves the installation of 33 turbines, each of which has a capacity of 1500kW and total installed capacity of 49.5MW. The starting date of operation of the Project activity was 22/11/2009. During this VCS monitoring period, the Project was in normal and smooth operation as per the registered PDD without any emergencies or special events.

2.2 Project Description Deviations

No deviation is identified in this monitoring period.

2.3 Grouped Project

N/A

3 DATA AND PARAMETERS

3.1 Data and Parameters Available at Validation

Data Unit / Parameter:	EF _{grid, CM, y}
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Data unit:	tCO ₂ /MWh
Description:	Baseline Emission Factor
Source of data:	The registered PDD
Value applied:	0.9502
Purpose of the data:	Baseline emission calculations
Any comment:	Ex-ante calculation fixed in the 1 st crediting period

3.2 Data and Parameters Monitored

Data Unit / Parameter:	EG _{facility,y}
Data unit:	MWh
Description:	The net electricity supplied by the project activity to the grid in year y
Source of data:	Calculated by $EG_{\text{export}, y} - EG_{\text{import}, y}$
Description of measurement methods and procedures to be applied:	This item is calculated based on hereinafter described parameters $EG_{\text{export}, y}$ and $EG_{\text{import}, y}$
Frequency of monitoring/recording:	Continuously measurement and monthly recording
Value monitored:	119,818.087
Monitoring equipment:	N/A
QA/QC procedures to be applied:	The meters in relation to $EG_{\text{export}, y}$ and $EG_{\text{import}, y}$ are well maintained and annually calibrated according to the relevant national electric industry standards and regulations.
Calculation method:	$EG_{\text{facility}, y} = EG_{\text{export}, y} - EG_{\text{import}, y}$
Any comment:	

Data Unit / Parameter:	EG _{export,y}
Data unit:	MWh
Description:	Electricity delivered to NCPG by the project in year y.
Source of data:	Directly measured
Description of measurement methods and procedures to be applied:	The electricity exported to the grid is monitored and measured by two electricity meters installed at the on-site substation.
Frequency of monitoring/recording:	Continuously measurement and monthly

	recording			
Value monitored:	120,597.267			
Monitoring equipment:		Type	Accuracy class	Serial Number
	M1	electricity meter	0.5S	LY807324
	M2	electricity meter	0.5S	LY807185
QA/QC procedures to be applied:	The meters are well maintained and annually calibrated according to the relevant national electric industry standards and regulations. For calibration info, please refer the table in Section3. Data measured by meters are double checked by electricity sales receipts.			
Calculation method:	N/A			
Any comment:				

Data Unit / Parameter:	EG _{import,y}			
Data unit:	MWh			
Description:	Electricity consumed by the project which is imported from the NCPG in year y.			
Source of data:	Directly measured			
Description of measurement methods and procedures to be applied:	The electricity imported from the grid is monitored and measured by two electricity meters installed at the on-site substation.			
Frequency of monitoring/recording:	Continuously measurement and monthly recording			
Value monitored:	779.180			
Monitoring equipment:		Type	Accuracy class	Serial Number
	M1	electricity meter	0.5S	LY807324
	M2	electricity meter	0.5S	LY807185
QA/QC procedures to be applied:	The meters are well maintained and annually calibrated according to the relevant national electric industry standards and regulations. For calibration info, please refer the table in Section3. Data measured by meters are double checked by electricity sales receipts.			
Calculation method:	N/A			
Any comment:				

3.3 Description of the Monitoring Plan

Monitoring plan was a division and schedule of a series of monitoring tasks. Monitoring tasks were implemented according to the monitoring plan.

1. Operational and management structure for monitoring

The monitoring of the emission reductions was carried out according to Figure3-1 below.

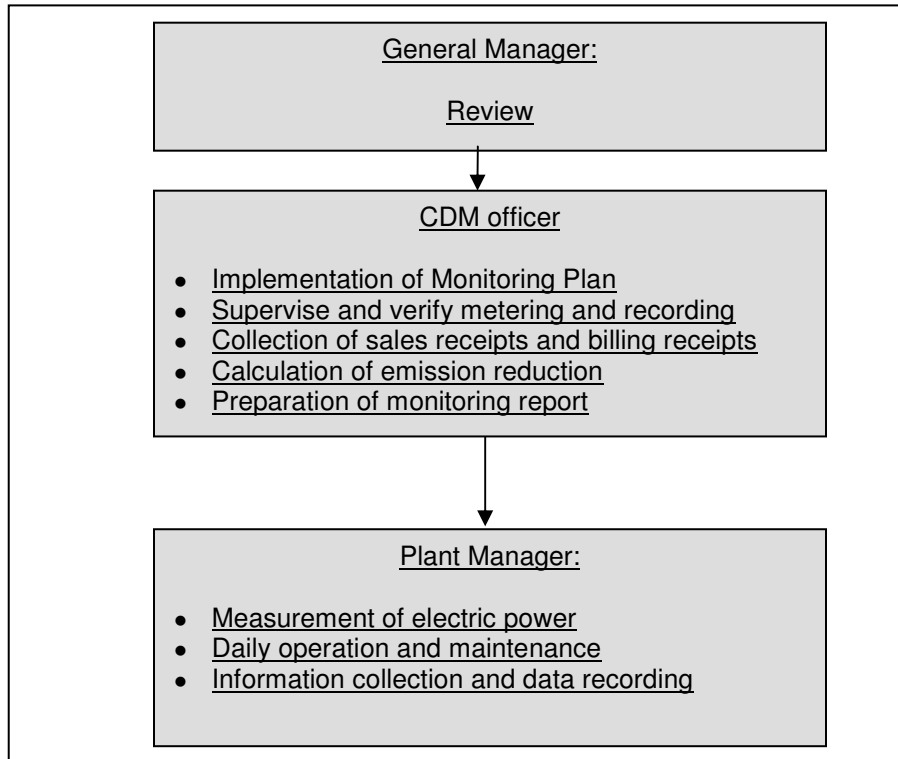


Figure3-1 The personnel structure of the Project monitoring

Plant manager of wind farm collected the information and data required by the Monitoring Plan. The collected information was documented and sent to the CDM officer monthly. The CDM officer was in charge of the implementation of the Monitoring Plan and reported to the General Manager of the company. The General Manager of the company made the confirmations on monitoring calculation data and reports.

2. Monitoring apparatus and installation

Electricity delivered to NCPG by the Project ($EG_{\text{export}, y}$) and electricity consumed by the Project which is imported from the NCPG ($EG_{\text{import}, y}$) are measured continuously by M1 and M2. The positions of the meters are showed as Figure 3-2. The sales receipts for the electricity exported to

the NCPG by the Project and electricity imported by the Project from the NCPG were issued for double check of the meter reading.

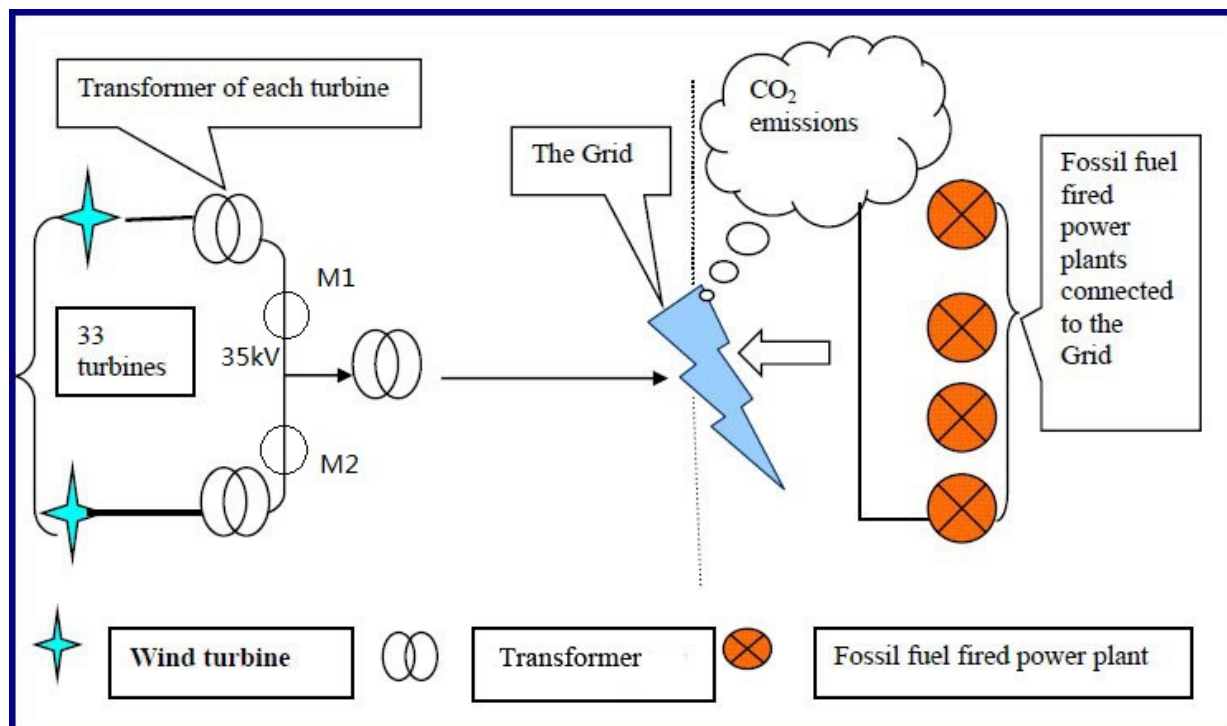


Figure 3-2: Line diagram of the Project activity

3. Calibration of Meters & Metering

An agreement was signed between the project owner and the local grid company that defines the metering arrangements and the required quality control procedures to ensure accuracy.

Calibration was carried out by Bayannaoer Power Administration Electric Energy Measurement and Verification Center according to relevant regulations of electric industry. Detailed information on calibration is specified in the table below.

Meter name	Calibration date	Certificate No.	Calibration Validity	Calibration Entity
M1	24/06/2009	Guohua Wind Farm Jianzi 2009-001	Yes	Bayannaoer Power Administration Electric Energy Measurement and Verification Center
	24/01/2010	Guohua Wind Farm Jianzi 2010-001		
M2	24/06/2009	Guohua Wind Farm Jianzi 2009-001	Yes	
	24/01/2010	Guohua Wind Farm Jianzi 2010-001		

4. Data monitoring

The readings of two meters installed in parallel connection in the Project activity site are used for calculating the emission reductions. The monitoring process is as follows:

- The data is measured continuously and recorded monthly;
- The project owner provides the grid company with sales receipt for the power exported to the grid and keeps the copies of these sales receipts. The power grid company provides the project owner with the data of power imported from the power grid
- The project owner provided DOE with record of net power generation data and copies of sales receipts

5 Quality Assurances and Quality Control

The QA/QC procedures had been strictly implemented as per the CDM PDD.

6. Data Management System

All monitoring data and records were archived in electronic documents as well as in paper. The electronic documents were backed up in compact disc or hard disc form. The project owner also kept the copies of sale receipts and prepared this monitoring report.

7. Training program

All the related staffs were trained by the project owner as per the CDM PDD. The training contained CDM knowledge, operational regulations, quality control (QC) standard, data monitoring and data management.

8. Monitoring Report

The manager wrote this monitoring report including electricity produced and emission reduction every month and then submitted it to the general manager, who audited it internally.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

In accordance with the ACM0002 (version 11), Baseline emissions are calculated according to the following formula:

$$BE_y = EG_{PJ, y} \times EF_{grid, CM, y} = EG_{facility, y} \times EF_{grid, CM, y} = (EG_{export, y} - EG_{import, y}) \times EF_{grid, CM, y}$$

Where:

BE_y , Baseline emissions in year y (tCO₂e),

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

$EG_{facility}$, The net electricity supplied by the Project activity to the grid in year y (MWh),

$EG_{export,y}$, Electricity delivered to NCPG by the Project in year y (MWh),

$EG_{import,y}$, Electricity consumed by the Project which is imported from the NCPG in year y (MWh),

$EF_{grid, CM, y}$, is the CO₂ emission factor of the grid which is ex-ante determined in the CDM-PDD and fixed in the crediting period, tCO₂e/MWh. The baseline emission factor $EF_{grid, CM, y}$ is 0.9502 tCO₂/MWh.

The values regarding amounts of baseline emission achieved in each vintage and in the whole verification period are listed in table 4-1. The monitoring data are listed in table 4-2~3.

Table 4-1 Baseline emission achieved in this VCS monitoring period

Monitoring Period	Vintage	Base line emission (t CO ₂ e)
01/12/2009-31/12/2010	01/12/2009-31/12/2009	5,642
	01/01/2010-31/12/2010	108,208
Total amount of baseline emission in this VCS monitoring period		113,850

Table 4-2 Electricity exported and imported by the Project

Period	Electricity delivered to NCPG by the Project (MWh) ($EG_{export,y}$)	Electricity consumed by the Project which is imported from NCPG (MWh) ($EG_{import,y}$)
01/12/2009-31/12/2009	6,013.350	74.860
Subtotal	6,013.350	74.860
01/01/2010-31/01/2010	9,071.790	106.840
01/02/2010-28/02/2010	5,593.030	111.450
01/03/2010-31/03/2010	11,249.390	53.530
01/04/2010-30/04/2010	12,280.930	48.240
01/05/2010-31/05/2010	12,405.427	28.670
01/06/2010-30/06/2010	10,290.000	36.740
01/07/2010-31/07/2010	10,071.904	24.060
01/08/2010-31/08/2010	7,970.818	84.150
01/09/2010-30/09/2010	8,864.560	48.380
01/10/2010-31/10/2010	8,933.363	52.150
01/11/2010-30/11/2010	9,253.605	44.070
01/12/2010-31/12/2010	8,599.100	66.040
Subtotal	114,583.917	704.320
Total	120,597.267	779.180

Table 4-3 Net electricity supplied to NCPG ($EG_{\text{facility},y}$, MWh)

Monitoring period	Vintage	$EG_{\text{export}, y}$	$EG_{\text{import}, y}$	Net Electricity supplied by the Project activity to the grid ($EG_{\text{facility},y}$)
		J	K	L=J-K
01/12/2009-31/12/2010	01/12/2009-31/12/2009	6,013.350	74.860	5,938.490
	01/01/2010-31/12/2010	114,583.917	704.320	113,879.597
Total		120,597.267	779.180	119,818.087

4.2 Project Emissions

According to the ACM0002, the emission of wind power project activity is zero, i.e. **PE_y=0**

4.3 Leakage

According to ACM0002, the leakage of wind power project need not be considered

4.4 Summary of GHG Emission Reductions and Removals

In line with the registered CDM PDD, the ERs are calculated as:

$$ER_y = BE_y - PE_y$$

Where,

- ER_y , emission reductions in year y,
- BE_y , baseline emissions in year y,
- PE_y , project emissions in year y.

The calculated results are listed in table 4-5.

Table 4-5 Emission reductions achieved in this VCS monitoring period.

Monitoring Period	Vintage	EF (tCO ₂ e/MWh)	BE _y (tCO ₂ e)	PE _y (tCO ₂ e)	Emission Reductions (tCO ₂ e)
01/12/2009-31/12/2010	01/12/2009-31/12/2009	0.9502	5,642	0	5,642
	01/01/2010-31/12/2010	0.9502	108,208	0	108,208

Total	0.9502	113,850	0	113,850
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5 ADDITIONAL INFORMATION

As per ex-ante calculation of the registered CDM-PDD, the estimated average of annual emission reductions is 123,126tCO₂e. The estimated ERs during this period are 133,583tCO₂e, whereas the actual emission reduction accomplished by the Project during this verification period is 113,850tCO₂e. The actual value of emission reductions in this period is lower than that estimated in the PDD.

Vintage	Estimated ER applied in the registered CDM-PDD (tCO ₂ e)	Actual ER values reached during the monitoring period (tCO ₂ e)	Comparison between the actual value and estimated value
	A	B	C=(A-B)/B
01/12/2009-31/12/2009	123,126/365*31=10,457	5,642	-46.05%
01/01/2010-31/12/2010	123,126/365*365=123,126	108,208	-12.12%
Total	123,126/365*396=133,583	113,850	-14.77%