

GANSU GUAZHOU BEIDAQIAO WIND POWER PROJECT

Project Title	<i>Gansu Guazhou Beidaqiao Wind Power Project</i>
Version	<i>Version 2.0</i>
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Monitoring Period	<i>22/01/2011 to 04/07/2011</i>
Prepared By	<i>Longyuan (Beijing) Carbon Asset Management Technology Co. Ltd</i>
Contact	<i>Address: Floor 7, Tower C, International Investment Building, No.6-9 Fuchengmen North Street, Xicheng District, Beijing 100034, China</i> <i>Telephone: +8610-66091326</i> <i>Email: Ligang@clypg.com.cn</i>

Table of Contents**1 PROJECT DETAILS**

- 1.1 Summary Description of Project
- 1.2 Sectoral Scope and Project Type
- 1.3 Project Proponent
- 1.4 Other Entities Involved in the Project
- 1.5 Project Start Date
- 1.6 Project Crediting Period
- 1.7 Project Location
- 1.8 Title and Reference of Methodology

2 IMPLEMENTATION STATUS

- 2.1 Implementation Status of the Project Activity
- 2.2 Deviations from the Monitoring Plan
- 2.3 Grouped Project

3 DATA AND PARAMETERS

- 3.1 Data and Parameters Available at Validation
- 3.2 Data and Parameters Monitored
- 3.3 Description of the Monitoring Plan

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

- 4.1 Baseline Emissions
- 4.2 Project Emissions
- 4.3 Leakage
- 4.4 Summary of GHG Emission Reductions and Removals

5 ADDITIONAL INFORMATION

1 PROJECT DETAILS

1.1 Summary Description of Project

Gansu Guazhou Beidaqiao Wind Power Project (hereafter referred as the project) is located in Guazhou County, Jiuquan City, Gansu Province. Totally 134 sets of 1500kW wind turbines have been installed, providing a total capacity of 201MW. The purpose of the project is to generate electricity using zero-emission wind resources and supply it to Northwest China Power Grid. In the registration PDD, the project was estimated to deliver 446,721tons of CO₂e emission reduction annually with an average annual electricity generation of 480,708 MWh.

The project began to construct on 28/11/2009, then all the 134 sets of wind turbines started to trial-operate on 16/12/2010 and all wind turbines have been put into full delivery since 01/02/2011. The project has been registered successfully as a CDM project on 05/07/2011. Moreover, all the operation status is consistent with the description in the registered PDD.

During the monitoring period (22/01/2011- 04/07/2011), the quantity of net electricity generation supplied by the project plant to the grid was 118,645.63 MWh and achieved 110,255tons of CO₂e emission reduction by replacing electricity generated by fossil fuel fired power plants connected into Northwest China Power Grid.

1.2 Sectoral Scope and Project Type

The Project comes under sectoral scope 1, Energy Industries renewable sources.

Project Category: Renewable electricity in grid connected applications

1.3 Project Proponent

Longyuan (Jiuquan) Wind Power Co., Ltd.

1.4 Other Entities Involved in the Project

No other entities.

1.5 Project Start Date

The project began to construct on 26/11/2009, then all the 134 sets of wind turbines started to trial-operate on 16/12/2010 and all wind turbines have been put into full delivery since 01/02/2011.

According to the monitoring data on site, the project start date of project crediting period was on 22/01/2011.

1.6 Project Crediting Period

The Project crediting period is from 22/01/2011 to 04/07/2011.

1.7 Project Location

The project is located in Guazhou County, Jiuquan City, Gansu province of China. Four inflexions of geographical scopes are A (E96.257°, N40.674), B (96.304°, N40.674), C (E96.304°, N40.744°) and D

(E96.257°, N40.744°).

1.8 Title and Reference of Methodology

Approved consolidated baseline and monitoring methodology ACM0002 “Consolidated baseline methodology for grid-connected electricity generation from renewable sources”- ACM 0002 (Version 12.1.0)

The methodology also refers to the latest approved versions of the following tools:

- Tool to calculate the emission factor for an electricity system (Version 0 2);
- Tool for the demonstration and assessment of additionality (Version 05.2);

2 IMPLEMENTATION STATUS

2.1 Implementation Status of the Project Activity

The project began to construct on 26/11/2009, then all the 134 sets of wind turbines started to trial-operate on 16/12/2010 and all wind turbines have been put into full delivery since 01/02/2011. The project is to generate electricity using zero-emission wind resources and supply it to Northwest China Power Grid.

During this monitoring period, the project had a smooth data transfer and good grid connection, and no special events happened. No events or situations occurred during the monitoring period, which may impact the applicability of the methodology.

2.2 Deviations from the Monitoring Plan

N/A.

2.3 Grouped Project

N/A.

3 DATA AND PARAMETERS

3.1 Data and Parameters Available at Validation

Data Unit / Parameter:	$EF_{grid,CM,y}$
Data unit:	t CO ₂ e/MWh
Description:	Combined margin CO ₂ emission factor for grid connected power generation in year y
Source of data:	Registered PDD
Value applied:	0.9293
Purpose of the data:	Baseline emission calculations

Any comment:	The emission factor of the project ($EF_{grid,CM,y}$) is ex-ante determined and is fixed during the first crediting period.
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3.2 Data and Parameters Monitored

Data Unit / Parameter:	$EG_{facility,y}$
Data unit:	MWh
Description:	Quantity of net electricity generation supplied by the project plant to the grid in year y
Source of data:	Measured electricity meters installed in the substation
Description of measurement methods and procedures to be applied:	Monitor continuously, then calculate the net electricity generation supplied by the project plant to the grid
Frequency of monitoring/recording:	Continuously measuring and monthly recording
Value monitored:	118,645.63
Monitoring equipment:	Meter (M1) Type: bidirectional electricity meter Accuracy class: 0.2S Serial number: 53034799 Calibration frequency: yearly Date of last calibration: 26/07/2010 Validity: 26/07/2010-25/07/2011 Meter (M2) Type: bidirectional electricity meter Accuracy class: 0.2S Serial number: 57034801 Calibration frequency: yearly Date of last calibration: 26/07/2010 Validity: 26/07/2010-25/07/2011
QA/QC procedures to be applied:	The Meters used for reading have been calibrated as per industry standards of host country. The metering equipments are calibrated annually and checked periodically by qualified institute for accuracy according to Chinese electric industry regulation.
Calculation method:	$EG_{facility,y} = EG_{export,y} - EG_{import,y}$

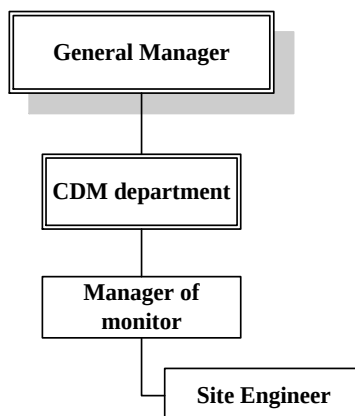
Any comment:	-
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3.3 Description of the Monitoring Plan

Monitoring plan is a division and schedule of a series of monitoring tasks. Monitoring tasks must be implemented according to the monitoring plan in order to ensure that the real, measurable and long-term greenhouse gas (GHG) emission reduction for the proposed project is monitored and reported.

1. Management Structure

The management structure is as follows:



The general manager is in charge of decision-making on major CDM issues, the CDM department is responsible for the concrete implementation of the Monitoring Plan. The monitor manager is responsible for supervising and checking the whole data record process and the calibration of meters. Another main task of the monitor manager is facilitating the verification through providing the DOE with all required necessary information. The site engineers collect monitoring data (e.g. electric meter data) and keep invoices of sales, etc.

2. Training

Longyuan (Jiuquan) Wind Power Co. Ltd assigns and trains the dedicated people carrying out the monitoring work. The monitoring personnel training by the contacted CDM consult company has been completed before the registration, further training work has been completed with the preliminary verification

3. Calibration and Arrangement of Meters

An agreement has been signed between the project owner and Power Grid Company that defines the metering arrangements and the required quality control procedures to ensure accuracy.

- ✦ For the project, all the wind turbines are divided into two loops to parallel-connect with a junction line to new adding transformer shared with other planning wind projects.
- ✦ Two meters are installed at two loops to monitor the electricity generation (accuracy degree is 0.2S, bidirectional).
- ✦ The metering equipment for electricity has been properly configured and calibrated. The metering equipment has been checked by the project owner and Power Grid Company before operation.
- ✦ The verification of electric energy meter has been periodically carried out according to relevant national electric industry standards or regulations. After verification, meters have been sealed. Meters have been jointly inspected and sealed on behalf of the parties concerned and have not been accessible by either party except in the presence of the other party or its accredited representatives.
- ✦ All the metering equipment for electricity installed has been tested by the qualified metrical agency co-authorized by the project owner and Power Grid Company, after:
 - 1) The detection of a difference larger than the allowable error in the reading of meters, when considering the reactive loss of electrical wire;
 - 2) The need for repair or replacement due to the damage of the meters in whole or in parts in accordance with the specifications.
- ✦ The project owner and Power Grid Company should have a remedial measure for the estimation of the correct reading according to agreed procedures under the signed agreement.

4. Monitoring parameters

All relevant parameters listed in Section D2 have been monitored according to the methodology requirements and description of measurement methods and procedures to be applied. The net electricity supplied the grid is measured continuously and recorded monthly as required by the methodology applied. The data and meter reading are well documented and be readily accessible for DOE.

5. Data recording

The project owner and Power Grid Company are responsible for the operation of meters, to ensure that all meters are in good conditions. Under such circumstances, the specific steps for data collection and reporting are listed below:

- 1) Power Grid Company and the project owner read the meters and record readings, on a fixed day of every month;
- 2) Power Grid Company supplies readings to the project owner and provides relevant documents. The electricity supplied to the grid is measured according to the read meter;
- 3) Project owner records the data of net electricity delivered to the grid, and the Power Grid Company supplies the confirmed notes to the project owner and keep a copy of the evidences;
- 4) Project owner provides the meter's readings and photocopies of sale evidences to DOE for verification.

Should any previous months reading of the meter be inaccurate by more than the allowable error, or otherwise functioned improperly, the electricity generation supplied to the grid by the proposed project shall be determined by:

- 1) The project owner and Power Grid Company shall jointly prepare an estimate of the correct reading;

and, provide ample evidence to DOE that the method is reasonable;

2) The meter reading shall be for backup usage;

3) If the project owner and Power Grid Company fail to agree the estimate of the correct reading, then the matter will be referred for arbitration according to agreed procedures.

6. Quality Assurance and Quality Control

The project activity has use high-precision monitoring equipment to monitor the electricity to the grid. All meters have been calibrated and sealed as per the industry practices at regular intervals. Hence, high quality is ensured. Electricity sales invoices have been used to test the consistency of the recorded data.

7. Data Management System

All parameters monitored under the monitoring plan are archived electronically and be kept at least for 2 years after the end of last crediting period. The monitored data are presented to the verification agency or DOE to whom verification of emission reductions is assigned.

The documents in paper format, such as maps, tables, and the EIA report, have been used in conjunction with the monitoring plan to check the authenticity of the information, and be kept at least one copy by the project owner.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

According to the methodology ACM0002, the baseline emissions are to be calculated as follows:

$$BE_y = EG_{PJ,y} \times EF_{grid,CM,y} = EG_{facility,y} \times EF_{grid,CM,y}$$

Where:

BE_y =Baseline emissions in year y (t CO₂e/yr)

$EF_{grid,CM,y}$ =Combined margin CO₂ emission factor for grid connected power generation in year y
(t CO₂e /MWh)

$EG_{PJ,y}$ =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/yr) .For the
Greenfield renewable energy power plants, $EG_{PJ,y} = EG_{facility,y}$

$EG_{facility,y}$ = Quantity of net electricity generation supplied by the project plant/unit to the grid in
year y (MWh/yr)

Period		Electricity exported to the grid by the project ($EG_{\text{export},y}$) (MWh)	Electricity imported from the grid by the project ($EG_{\text{import},y}$) (MWh)	Net electricity supplied to the grid ($EG_{\text{facility},y}$) (MWh)
From	To	A	B	C=A-B
22/01/2011	29/01/2011	9,090.38	63	9,027.38
30/01/2011	26/02/2011	12,412.75	28.875	12,383.88
27/02/2011	29/03/2011	25,139.63	34.125	25,105.50
30/03/2011	28/04/2011	24,087.88	25.375	24,062.50
29/04/2011	29/05/2011	25,467.75	37.625	25,430.13
30/05/2011	28/06/2011	18,664.63	24.5	18,640.13
29/06/2011	04/07/2011	3,998.75	2.625	3,996.13
Total		118,861.75	216.125	118,645.63

Note:

(1) According to the requirement of local grid company, the transaction date of electricity exported to /imported from the grid would be recorded on 24:00 of the third last day of every month.

(2) The local power grid company issued a clarification letter for the transaction date of electricity exported to /imported from the grid by the project on 04/07/2011.

According to the registered PDD, the combined baseline emission factor of the Northwest China Power Grid is:

$$EF_{\text{grid},CM,y} = 0.9293 \text{ t CO}_2\text{e /MWh.}$$

According to the monitoring records during the monitoring period, the net electricity generation delivered to the power grid was:

$$EG_{PJ,y} = EG_{\text{facility},y} = 118,645.63 \text{ MWh.}$$

The baseline emissions of the project were:

$$BE_y = EG_{PJ,y} \times EF_{\text{grid},CM,y} = EG_{\text{facility},y} \times EF_{\text{grid},CM,y} = 110,255 \text{ t CO}_2\text{e}$$

4.2 Project Emissions

According to the baseline methodology ACM0002, the GHG emission of the project within the project

boundary is zero, i.e. $PE_y = 0$.

4.3 Leakage

According to the baseline methodology ACM0002, the leakage of the project is not considered, i.e.

$Ly = 0$.

4.4 Summary of GHG Emission Reductions and Removals

According to the methodology ACM0002: the emission reductions in year y (ER_y) should be calculated as: $ER_y = BE_y - PE_y - Ly$

Monitoring periods	Total Baseline emissions: (tCO _{2e})	Total Project emissions: (tCO _{2e})	Total Leakage (tCO _{2e})	Total Emission Reductions (tCO _{2e})
22/01/2011- 04/07/2011	110,255	0	0	110,255

5 ADDITIONAL INFORMATION

The actual emission reductions are 110,255 tCO_{2e} during this monitoring period that covers 164 days, which is less than the estimated value of 200,718 tCO_{2e} calculated by the estimated emission reduction annually in the registered PDD. There is no any significant increase compared with the estimated emission reduction in the registered PDD.