MONITORING REPORT FORM (CDM-MR) *
Version 01 - in effect as of: 28/09/2010

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MONITORING REPORT
Version 02, 14/06/2011

CECIC HKE Zhangbei Lvnaobao Wind Power Project
CDM Reference number: 3399
The monitoring period: 01/08/2010-27/10/2010

SECTION A. General description of the project activity

A.1. Brief description of the project activity: >>

>>
CECIC HKE Zhangbei Lvnaobao Wind Power Project (hereafter referred as "the Project") is located at Zhangbei County, northwest region of Hebei Province, China. The purpose of the Project is to generate electricity using wind power resources in the project region and to deliver to the North China Power Grid (NCPG) which is predominated by connected fossil fuel fired power plants, especially coal fired plants. So the Project can reduce GHG emissions by replacing the electricity generated by fossil fuel fired power plants in NCPG.

The Project involves the installation of 67 wind turbines with 1.5MW capacity per unit, with a total installed capacity of 100.5 MW. Total of 241,700 MWh electricity generated by the Project are expected to be delivered to the NCPG annually. Accordingly, the Project estimated can reduce GHG emissions about 254,960 tCO_2e per year.

The Project started construction on Aug. 2008. The wind turbines of the Project commissioning started on 26/07/2010. The Project started full commissioning on 24/09/2010. The wind farm operates normally and smoothly. The Project was registered to be a CDM project successfully on 28/10/2010.

This monitoring period of the Project is from 01/08/2010 to 27/10/2010. The total emission reduction of the first monitoring period is: 14,752 tCO_2e.

A.2. Project Participants

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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)
P.R.China (Host)	CECIC HKE Wind Power CO.,LTD	No

A.3. Location of the project activity:

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The Project is located at Zhangbei County, Zhangjiakou City, Hebei Province, P.R.China. The Project has geographical coordinates with North Latitude of 41°03′50″, East Longitude of 114°32′30″. The altitude of the site ranges from 1,450m to 1,680m above mean sea level. The Project covers a wind farm area of about 48 km^2. More details shown as follow figure 1.

Figure1. Location of the Project

A.4. Technical description of the project

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Total 67 units of wind power turbine and generators with 1.5MW unit capacity each, are installed in the Project, forming 100.5MW of total capacity. These wind turbines are manufactured by China's Dongfang Steam Turbine Co., Ltd and the model type of these wind turbines is FD77B. The main technology parameter of this type of wind power turbine can be found at Table 1.

Table 1 Technology parameter of WTGs for the Project

Key Technology Parameter	FD77B
Rated power (kW)	1500
Number of Blades	3
Rotor diameter (m)	77
Swept area(m^2)	4657

Rated Rotational speed (rpm)	9.6-17.3
Cut-in wind speed (m/s)	3
Rated wind speed (m/s)	12.5
Cut-out wind speed (m/s)	20
Hub height of the wind turbines (m)	70
Capacity (kW)	1500
Rated Voltage (V)	690

Each wind turbine has a transformer from 690V to 35kV. The wind farm was connected with one new-built 35kV/220kV substation located within the project site, and then to NCPG via a series of substation.

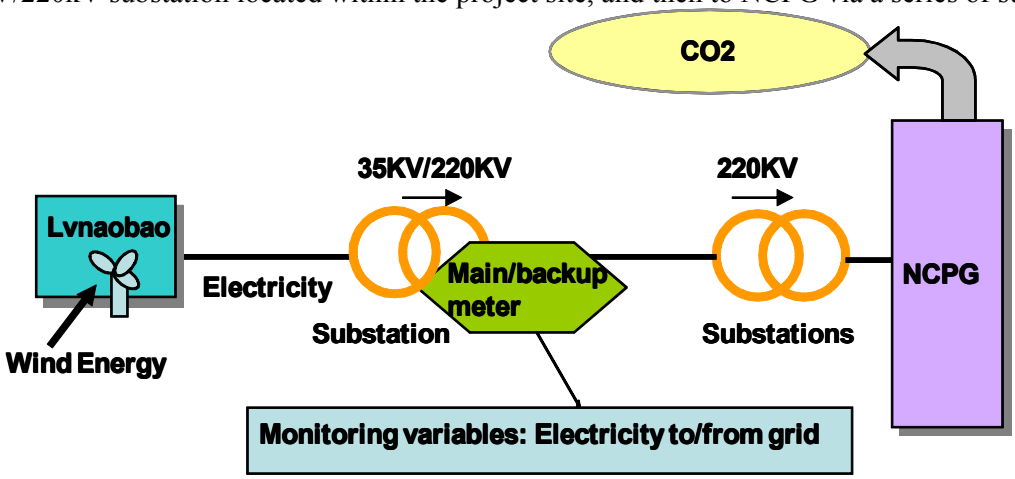

Figure 2 Illustration of the Lvnaobao wind power project

A.5. Title, reference and version of the baseline and monitoring methodology applied to the project activity:

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Approved consolidated baseline and monitoring methodology ACM0002: "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (Version 10, 28 May, 2009), and

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

- Tool for the demonstration and assessment of additionality (version 5.2),
- Tool to calculate the emission factor for an electricity system (version 02)

Reference: UNFCCC website: http://cdm.unfccc.int/methodologies/PAmethodologies/approved

A.6. Registration date of the project activity:

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The Project registered as a CDM project on 28/10/2010.

A.7. Crediting period of the project activity and related information (start date and choice of crediting period):

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01/08/2010-27/10/2010

A.8. Name of responsible person(s)/entity(ies):

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Contact information of the persons/entities responsible for completing the monitoring report form (CDM-MR) is listed as follows:

CECEP Wind Power Incorporated Company.

Address: 12th Floor, A Building Jieneng Mansion, No.42 Xizhenmen North Street, Haidian District, Beijing, China 100082.

Mr. Shen Hongshuai. Tel: +86-10-62248705, Email: shenhongshuai@gmail.com;
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Mr. Yao Xi. Tel: +86-10-62248706, Email: yaoxi@cecwpc.cn.

SECTION B. Implementation of the project activity

B.1. Implementation status of the project activity

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The Project was started construction in Aug 2008. The first wind turbine of the Project started commissioning on 26/07/2010. The Project started full commissioning on 24/09/2010. The electricity generated by the Project is delivered to NCPG, according to the signed power purchase agreement (PPA) with Zhangjiakou Power Grid Co., Ltd.

The wind farm operates smoothly and normally during this monitoring period. There have been no emergencies happened to the monitoring system in this monitoring period.

B.2. Revision of the monitoring plan

>>
Not Applicable

B.3. Request for deviation applied to this monitoring period

>>
Not Applicable

B.4. Notification or request of approval of changes

>>
Not Applicable

SECTION C. Description of the monitoring system

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The implementation of monitoring system and Management organization for the Project are fully in consistent with the description in the PDD Monitoring Plan.

1. Organizational structure and responsibilities

Overall responsibility for monitoring and carrying out the monitoring following this monitoring plan lies with CECIC HKE Wind Power Co., Ltd. The CDM Manager of the CECIC HKE Wind Power Co., Ltd is responsible for the monitoring and reporting of the generation and emission reductions of the project activity. The operating and management structure is illustrated as followed:

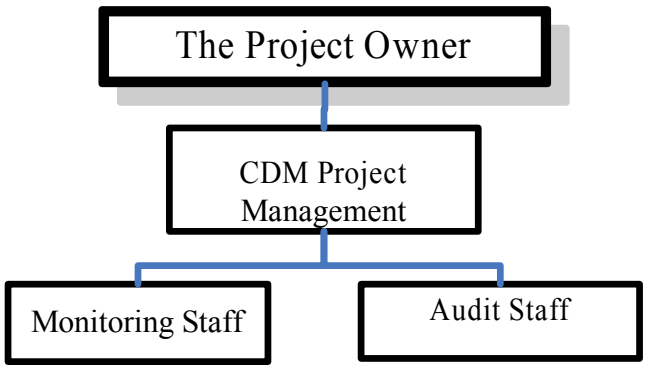
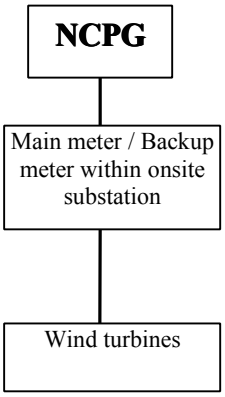


Figure 3 Monitoring system organizations

2. Data collection and management

As described in the monitoring plan, the Project wind farm records reading monthly from the meter equipment within the project site. The monthly cut-off time for the Grid company to read $EG_{togrid,y}$ and $EG_{fromgird,y}$ for the ETN issuance is the 24:00 on one day at the end of each month.

The net electricity generation of the Project was monitored through the main bi-directional metering equipment installed at the onsite 220kV substation, recording exported to the grid by the Project ($EG_{togrid,y}$)and imported from the grid by the Project ($EG_{fromgrid,y}$). The Net generation supplied is calculated as exports minus imports. The data was monitored continuously, and the results of reading was recorded and supplied to Zhangjiakou Electric Power Company monthly. The monitoring points shows below:



Designated personnel of the wind farm read and record the readings of the meters mentioned above monthly. The CDM manager of the Project wind farm checked out the reported data against with the Electricity Transaction Notes (ETN) or sale invoice before archived.

All data including calibration records was kept until 2 years after the end of the total crediting period of the Project.

Emergency Procedures

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.

Should any previous month's reading of the main meter be inaccurate by more than the allowable error, or otherwise functioned improperly, the net generation output shall be determined by:

(a) first, by reading backup meter, unless a test by either party reveals it is inaccurate;
(b) if the backup system is not with acceptable limits of accuracy or operation is performed improperly the project owner and the grid company shall jointly prepare a reasonable and conservative estimate of the correct reading, and provide sufficient evidence that this estimation is reasonable and conservative when DOE undertakes verification; and
(c) if the two parties fail to agree then the matter will be referred for arbitration according to agreed procedures.

SECTION D. Data and parameters

D.1. Data and parameters determined at registration and not monitored during the monitoring period, including default values and factors

Data / Parameter:	**$EF_{grid,CM,y}$**
Data unit:	tCO_2e/MWh
Description:	Baseline emission factor: the combined emission factor of the project grid system.
Source of data used:	Source from the Section B.6 of the registered PDD for the Project.
Value(s) :	1.05485
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Used for baseline emission calculations.
Additional comment:	The emission factor of the Project was ex-ante determined and is fixed during the first crediting period. All data and parameters had been determined at registration.

D.2. Data and parameters monitored

Data / Parameter:	***$EG_{togrid,y}$***
Data unit:	MWh
Description:	Quantity of electricity exported to the grid by the Project
Measured /Calculated /Default:	Measured
Source of data:	Meter reading record of onsite main meter
Value(s) of monitored parameter:	14,098.818 MWh
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Used for the baseline emission calculations.
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	

Serial No.	Accuracy	Calibration date	Validity of the Calibration	Calibration frequency
37006426 Main meter	0.2s	30/11/2009	29/11/2010	Annually
37006420 Backup meter	0.2s	30/11/2009	29/11/2010	Annually

Measuring/ Reading/ Recording frequency:	Measuring continuously/Recording monthly
Calculation method (if applicable):	-
QA/QC procedures applied:	Monthly power exported and imported from the NCPG are cross-checked against ETNs and sales receipts. The calibrations are done by a qualified organization at least once per year for the main meter and backup meter according to local industry standards.

Data / Parameter:	***$EG_{fromgrid,y}$***
Data unit:	MWh
Description:	Quantity of annual electricity imported from the grid by the Project
Measured /Calculated /Default:	Measured
Source of data:	Meter reading record of onsite main meter
Value(s) of monitored parameter:	113.850 MWh

Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Used for the baseline emission calculations.
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	

Serial No.	Accuracy	Calibration date	Validity of the Calibration	Calibration frequency
37006426 Main meter	0.2s	30/11/2009	29/11/2010	Annually
37006420 Backup meter	0.2s	30/11/2009	29/11/2010	Annually

Measuring/ Reading/ Recording frequency:	Measuring continuously/Recording monthly
Calculation method (if applicable):	-
QA/QC procedures applied:	Monthly power exported and imported to the NCPG are cross-checked against ETNs and sales receipts. The calibrations are done by a qualified organization at least once per year for the main meter and backup meter according to local industry standards.

Data / Parameter:	EG_y
Data unit:	**MWh**
Description:	Net electricity supplied to the grid by the Project
Measured /Calculated /Default:	Calculated
Source of data:	Meter reading record of onsite main meter
Value(s) of monitored parameter:	13,984.968MWh.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Used for the baseline emission calculations.
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	

Serial No.	Accuracy	Calibration date	Validity of the Calibration	Calibration frequency
37006426 Main meter	0.2s	30/11/2009	29/11/2010	Annually
37006420 Backup meter	0.2s	30/11/2009	29/11/2010	Annually

Measuring/ Reading/ Recording frequency:	Measuring continuously/Recording monthly
Calculation method (if applicable):	$EG_y = EG_{togrid,y} — EG_{fromgrid,y}$ EG_y is electricity exported to the grid by the project ($EG_{togrid,y}$) minus electricity imported from the grid by the project ($EG_{fromgrid,y}$).
QA/QC procedures applied:	Monthly power exported and imported to the NCPG are cross-checked against ETNs and sales receipts. The calibrations are done by a qualified organization at least once per year for the main meter and backup meter according to local industry standards.

SECTION E. Emission reductions calculation

E.1. Baseline emissions calculation

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According to ACM0002 and the registered PDD of the Project, The baseline emission BE_y during the monitoring period results from:

$BE_y = EG_y \times EF_{grid,CM,y}$

$EG_y = EG_{togrid,y} - EG_{fromgrid,y}$

Where:
BE_y is the baseline emissions of the Project;
$EF_{grid,CM,y}$ is the combined margin baseline emission factor of the NCPG;
EG_y is the net electricity supplied to the grid by the Project;
$EG_{togrid,y}$ is the quantity of electricity exported to the grid by the Project;
$EG_{fromgrid,y}$ is the quantity of electricity imported from the grid by the Project.

The monthly electricity data is listed in following table 2:

Table2. Calculation of the net electricity supplied to the grid by the Project

Period	Electricity exported to the grid by the Project $EG_{togrid,y}$ (MWh)	Electricity imported from the grid by the Project $EG_{fromgrid,y}$ (MWh)	Net electricity supplied to the grid by the Project EG_y (MWh)
	A	B*	$EG_{togrid,y}$ minus $EG_{fromgrid,y}$ C=A-B
01/08/2010-31/08/2010	320.650	39.325	281.325
01/09/2010-30/09/2010	3,441.075	24.200	3,416.875
01/10/2010-27/10/2010	10,337.093	50.325	10,286.768
Total	14,098.818	113.850	13,984.968

Note:* For a conservative calculation, the data in the column of data from the invoice for the EGfromgrid,y is the total amount of electricity imported from the grid by the Project from 26/07/2010 to 31/10/2010.

The baseline emission during this monitoring period calculated as following:

$BE_y = EG_y \times EF_{grid,CM,y}$
$= 13,984.968\ MWh \times 1.05485\ tCO_2e/MWh$
$= 14,752\ tCO_2e$

E.2. Project emissions calculation

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Project emission (PE_y) is 0 tCO_2e as per the registered PDD.

E.3. Leakage calculation

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Leakage (L_y) is 0 tCO_2e as per the registered PDD.

E.4. Emission reductions calculation / table

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The total Emission Reduction (ER_y) during this monitoring period is calculated as follow:

$ER_y = BE_y - PE_y - Ly = 14,752 - 0 - 0 = 14,752\ tCO_2e$

E.5. Comparison of actual emission reductions with estimates in the CDM-PDD

>> The estimated annual emission reduction in the registered PDD is 254,960 tCO_2e which is equal to 698.5205 tCO_2e per day. So, the estimated emission reduction is 61,469 tCO_2e in 88 days (total days of this monitoring period) based on the registered PDD.

Item	Values applied in ex-ante calculation of the registered CDM-PDD	Actual values reached during the monitoring period
Emission reductions (tCO_2e)	**The estimated emission reduction is 61,469 tCO_2e in 88 days during this monitoring period**	**Actual emission reduction is 14,752 tCO_2e for this monitoring period.**

E.6. Remarks on difference from estimated value in the PDD

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The actual emission reductions during this monitoring period are 14,752 tCO_2e, which is less than the estimated value in the registered PDD. There is no any significant increase compared with the estimated emission reduction in the registered PDD.

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