

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

CONTENTS

- A. General description of the project activity
 - A.1. Brief description of the project activity
 - A.2. Project participants
 - A.3. Location of the project activity
 - A.4. Technical description of the project
 - A.5. Title, reference and version of the baseline and monitoring methodology applied to the project activity
 - A.6. Registration date of the project activity
 - A.7. Crediting period of the project activity and related information
 - A.8. Name of responsible person(s)/entity(ies)
- B. Implementation of the project activity
 - B.1. Implementation status of the project activity
 - B.2. Revision of the monitoring plan
 - B.3. Request for deviation applied to this monitoring period
 - B.4. Notification or request of approval of changes
- C. Description of the monitoring system
- D. Data and parameters monitored
 - D.1. Data and parameters used to calculate baseline emissions
 - D.2. Data and parameters used to calculate project emissions
 - D.3. Data and parameters used to calculate leakage emissions
 - D.4. Other relevant data and parameters
- E. Emission reductions calculation
 - E.1. Baseline emissions calculation
 - E.2. Project emissions calculation
 - E.3. Leakage calculation
 - E.4. Emission reductions calculation
 - E.5. Comparison of actual emission reductions with estimates in the registered CDM-PDD
 - E.6. Remarks on difference from estimated value

* as contained within the document entitled "Guidelines for completing the monitoring report form (CDM-MR)" (EB 54 meeting report, annex 34).

MONITORING REPORT
Version 1.0 date 03/06/2011

CGN INNER MONGOLIA ZHURIHE PHASE II WIND FARM PROJECT
UNFCCC reference number: 3453
The 1st monitoring period (30/10/2010 - 30/04/2011)

SECTION A. General description of the project activity

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

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CGN Inner Mongolia Zhurihe Phase II Wind Farm Project is generating renewable electricity utilizing wind power and selling the generated output to the North China Power Grid (NCPG). The ex-ante expected net generation of the project activity is approximately 125,573MWh per year, with a load factor of 28.7%.

Project timeline

Starting date of the project	15/03/2009
Construction start date	10/04/2009
Commissioning start date	01/01/2010
Date of CDM registration	30/10/2010 (PDD version 4.0, dated 03/06/2010)
First renewable crediting period	30/10/2010 - 29/10/2017
Starting date of crediting period	30/10/2010
The first monitoring period	30/10/2010 - 30/04/2011

The total emission reductions achieved in the current monitoring period are 63,573tCO₂e.

A.2. Project Participants

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Name of Party involved	Private and/or public entity(ies) project participants (as applicable)	Party involved wishes to be considered as project participant (Yes/No)
P.R. China (host)	CGN Wind Power Co., Ltd.	No
United Kingdom of Great Britain and Northern Ireland	Carbon Resource Management Ltd.	No

A.3. Location of the project activity:

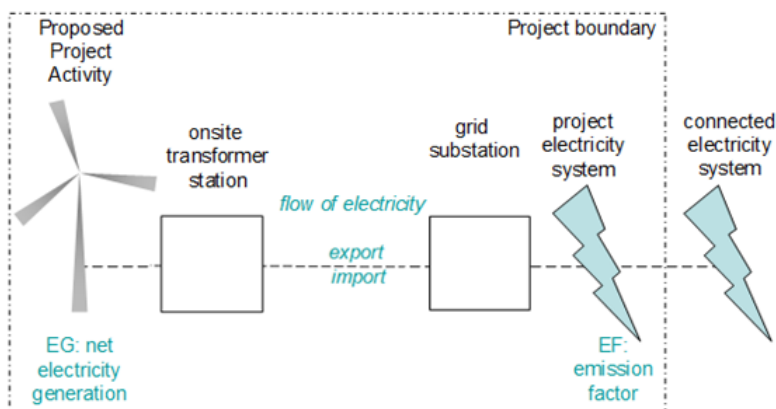
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Host country	People's Republic of China
Province	Inner Mongolia Autonomous Region
City	Zhurihe Town, Xilinguole League
GPS coordinates	Latitude 42°27'11"North Longitude 112°48'03" East

A.4. Technical description of the project

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Total net annual generation of electricity of the project is estimated to be 125,573 MWh, with an average load factor of 28.7%. The electricity is exported through the transmission line from the on-site substation to the substation of the power grid.



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

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The approved methodology applied to the project is the approved baseline methodology ACM0002 (version 10) -“Consolidated baseline methodology for grid-connected electricity generation from renewable sources’ and the approved monitoring methodology ACM0002 (version 10) - “Consolidated monitoring methodology for grid-connected electricity generation from renewable sources”. These documents are available from: <http://cdm.unfccc.int/methodologies/approved>.

A.6. Registration date of the project activity:

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30/10/2010 (PDD version 4.0, dated 03/06/2010)

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

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Crediting period	First renewable crediting period
Starting date of crediting period	30/10/2010
End date of crediting period	29/10/2017

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

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Contact information of the person(s)/entity(ies) responsible for completing the monitoring report form (CDM-MR):

- The persons preparing the documentation were:
 - Ms. Zhang Ling, zl@carbonresource.com, Tel: +86 10 8447 5246/33
 - Mr. Zhu Hailei, zhhl@carbonresource.com, Tel: +86 10 8447 5246/8
 - Mr. John Green, jg@carbonresource.com, Tel: +41 22 328 0851
- The entity preparing the documentation: Carbon Resource Management Ltd. 49 St. James’s Street, London, SW1A 1JT, The United Kingdom

SECTION B. Implementation of the project activity

B.1. Implementation status of the project activity

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The project activity was started construction on 10/04/2009. The first turbine was commissioned on 01/01/2010, and all the wind turbines have been put into operation during this monitoring period, and well operated during this monitoring period.

During this monitoring period, the wind farm has a good running, smooth data transfer and grid connection, and no special events happened.

No events or situations occurred during the monitoring period, which may impact the applicability of the methodology.

B.2. Revision of the monitoring plan

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The project is implemented as in the registered monitoring plan, no revision is applied.

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

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The project is implemented as in the registered monitoring plan, no deviation is applied.

B.4. Notification or request of approval of changes

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The project activity is implemented as in the registered CDM-PDD, there is no notification or request of approval of changes from the project activity as described in the registered CDM-PDD.

SECTION C. Description of the monitoring system

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1. Monitoring system and data collection

The net electricity supplied to the grid is continuously measured by the main meter installed at the substation. This main meter is bidirectional and has two-way metering, recording both electricity delivered to the grid by the project activity ($EG_{\text{export},y}$) and electricity purchased from the grid by the project activity ($EG_{\text{import},y}$); net electricity supplied to the grid by the project is calculated as electricity delivered to the grid minus the electricity purchased from the grid.

Currently, the project activity shares the same transformer, substation and transmission line with one other wind farm, named CGN Inner Mongolia Zhurihe Phase I Wind Farm Project. In accordance with Section B.7.2 of the registered PDD, if the proposed project has to share the same transformer, substation or transmission line with some other wind farms, appropriate additional meters will be installed. Therefore, separate meters $M_1 \sim M_8$ has been installed at the project site so that the electricity generation can be monitored for each wind farm separately so as to calculate the share of this wind farm of the total net electricity exported to the grid. $M_5 \sim M_8$ are installed in Line5#~8# respectively to monitor the generation from the project activity; $M_1 \sim M_4$ are installed in Line1#~4# respectively to monitor the generation from other project.

Therefore, the electricity generation can be monitored respectively to calculate the share of this wind farm of the total net exported electricity to the grid ($EG_{\text{export, total}}$).

The net electricity supplied by the project activity (EG_y) is calculated as follows:

$$EG_{\text{export}, y} = EG_{\text{export, total}} * EG_{\text{project}} / (EG_{\text{project}} + EG_{\text{others}})$$

$$EG_{\text{import}, y} = EG_{\text{import, total}}$$

$$EG_y = EG_{\text{export}, y} - EG_{\text{import}, y}$$

$EG_{\text{export, total}}$ is total exported electricity to the grid based on the data metered by the main meter at the substation;

$EG_{\text{import, total}}$ is total imported electricity from the grid based on the data metered by the main meter at the substation;

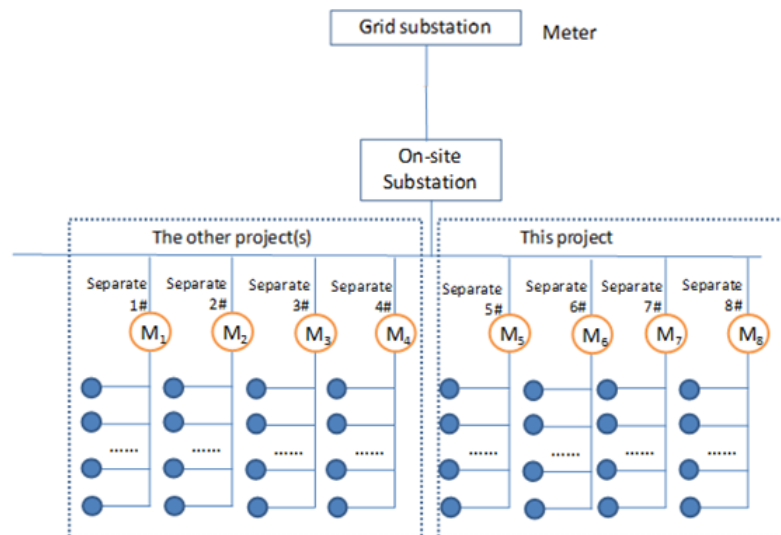
EG_{project} is the electricity generation of the proposed project based metered by separate meters at the project site;

EG_{others} is the electricity generation of other wind farm projects based metered by other separate meters;

EG_y is the net electricity supplied to the grid by the proposed project.

The location of the main meter, backup meter, separate meters in relation to the grid, project, other

project transmission lines are displayed as following diagram:



2. Information Flow

- The cut-off time is 24:00 of the last day of every month;
- The readings of the main meter and the separate meters are monitored continuously and recorded monthly;
- Each month, the grid company issues Settling Accounts Sheet to the developer upon the confirmed data;
- The electricity data of the separate meters is cross checked with the Settling Accounts Sheet issued by the grid company;
- The project developer provides the power grid company with a sale receipt after the power grid company has confirmed the Settling Accounts Sheet, and archives a copy of the sale receipt;
- The wind farm carries out an internal audit on and reports the readings to the DOE before the verification is requested.

3. Organizational structure and responsibilities

Overall responsibility for monitoring and carrying out the monitoring following this monitoring plan lies with the CGN Wind Power Co., Ltd. Carbon Resource Management Ltd. had advised the project developer on how to perform the monitoring work. The staffs who were responsible for electricity meter readings and recording, and who were responsible for auditing the metered data had been trained according to the CDM requirements.

4. Data management

All monitoring data and records will be archived in electronic format as well as on paper. The electronic documents will be backed up on compact disc or hard disc. The project developer will also keep copies of sale receipts and prepare a monitoring report at the end of each year, which includes the net electricity generation, the monitoring data summary, the calibration records, and the emission reductions calculation.

All the electronic and paper documents will be archived during the crediting period plus two years.

5. Emergency procedures

The meters were calibrated and checked for accuracy. Calibration was carried out by the qualified entity. Meters had been jointly inspected and sealed on behalf of the parties concerned. No errors occurred during this monitoring period.

When the main meter or back-up meter have a breakdown, the electricity generation difference will be treat as follows:

- (a) When one of the two meters has a breakdown, the readings of the other meter will be adopted;

(b) If both the main meter and back-up meter have breakdowns, the net electricity supplied to the grid will be calculated from the readings of other meters and deducting the line losses.

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

(Copy this table for each data and parameter. To report multiple values, a table may be used)

Data / Parameter:	$EF_{grid, CM, y}$
Data unit:	tCO₂/MWh
Description:	Emission factor which is ex-anted according to the applied methodology
Source of data used:	Registered PDD
Value(s) :	0.9502
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Baseline emission calculation
Additional comment:	

D.2. Data and parameters monitored

Data / Parameter:	$EG_{facility, y}$
Data unit:	MWh
Description:	Net electricity supplied to the grid by the project in period y
Measured /Calculated /Default:	Calculated as export of electricity ($EG_{export, y}$) minus consumption of electricity ($EG_{import, y}$).
Source of data:	Monthly reading records of the main meter and the separate meters
Value(s) of monitored parameter:	Detailed monthly data and calculation is presented in section E.1 of the monitoring report. $EG_{facility, y}$ during this monitoring period is 66,904.55MWh.
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Baseline Emission calculation
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	The main meter and the separate meters.
Measuring/ Reading/ Recording frequency:	Measuring continuously/ Recording monthly
Calculation method (if applicable):	$EG_{facility, y} = EG_{export, y} - EG_{import, y}$
QA/QC procedures applied:	Cross checked with the receipts.

Data / Parameter:	$EG_{export, y}$
Data unit:	MWh
Description:	The quantity of annual electricity delivered to the grid by the proposed project
Measured /Calculated /Default:	It is monitored continuously through main meter and the separate meters. The electricity meter measures continuously and accumulatively. The data is recorded monthly.
Source of data:	Monthly reading records of the main meter and the separate meters.
Value(s) of monitored parameter:	Detailed monthly data and calculation is presented in section E.1 of the monitoring report. $EG_{export, y}$ during this monitoring period is 67,366.60

	MWh
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Baseline Emission calculation
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	The main meter and the separate meters.
Measuring/ Reading/ Recording frequency:	Measuring continuously/ Recording monthly
Calculation method (if applicable):	/
QA/QC procedures applied:	Cross checked with the receipts.

Data / Parameter:	$EG_{import, y}$
Data unit:	MWh
Description:	The quantity of annual electricity purchased from the grid by the proposed project.
Measured /Calculated /Default:	It is monitored continuously through main meter and the separate meters. The electricity meter measures continuously and accumulatively. The data is recorded monthly.
Source of data:	Monthly reading records of the main meter and the separate meters.
Value(s) of monitored parameter:	Detailed monthly data and calculation is presented in section E.1 of the monitoring report. $EG_{import, y}$ during this monitoring period is 462.04 MWh
Indicate what the data are used for (Baseline/ Project/ Leakage emission calculations)	Baseline Emission calculation
Monitoring equipment (type, accuracy class, serial number, calibration frequency, date of last calibration, validity)	The main meter and the separate meters.
Measuring/ Reading/ Recording frequency:	Measuring continuously/ Recording monthly
Calculation method (if applicable):	/
QA/QC procedures applied:	Cross checked with the receipts.

SECTION E. Emission reductions calculation

E.1. Baseline emissions calculation

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The baseline emissions in year y is calculated as

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

The detailed calculation of EG_y is calculated below:

Table 1 the monitored data of the separate meters (Unit: MWh)

Period	Electricity generation of the other project metered by the other separate meters				EG _{others}
	#1	#2	#3	#4	Total
	A	B	C	D	E=A+B+C+D
30/10/2010-31/10/2010	74.04	85.73	88.68	47.70	296.14
01/11/2010-30/11/2010	3779.27	4232.50	3774.17	3615.46	15401.40
01/12/2010-31/12/2010	2281.84	2596.51	2514.91	2978.64	10371.90
01/01/2011-31/01/2011	2123.91	3003.96	3599.69	3347.30	12074.86
01/02/2011-28/02/2011	1768.03	1532.10	1664.26	2087.67	7052.06
01/03/2011-31/03/2011	2314.62	2014.74	2337.30	2430.33	9096.99
01/04/2011-30/04/2011	2442.72	2336.67	2363.97	2176.44	9319.80
Period	Electricity generation of the project activity metered by the separate meters				EG _{project}
	#5	#6	#7	#8	Total
	F	G	H	I	J=F+G+H+I
30/10/2010-31/10/2010	52.98	55.10	81.00	60.60	249.68
01/11/2010-30/11/2010	2340.41	2651.28	4628.08	4547.63	14167.40
01/12/2010-31/12/2010	4218.88	4357.84	2468.38	2923.69	13968.79
01/01/2011-31/01/2011	2936.16	3182.19	2627.11	3394.84	12140.30
01/02/2011-28/02/2011	2899.32	3107.50	1462.73	2132.65	9602.20
01/03/2011-31/03/2011	1925.07	2449.92	2221.17	2398.20	8994.36
01/04/2011-30/04/2011	2009.07	2574.75	2367.75	2548.77	9500.34

Table 2 the monitored data of the main meter and calculation of EG_y (Unit: MWh)

Period	EG _{export, total}	EG _{import, total}	EG _{project}	EG _{others}	EG _{export, y}	EG _y
	K	L	J	E	M=K*J/(E+J)	N=M-L
30/10/2010-31/10/2010	532.38	1.92	249.68	296.14	243.53	241.61
01/11/2010-30/11/2010	29078.79	24.72	14167.40	15401.40	13932.62	13907.90
01/12/2010-31/12/2010	23845.28	41.09	13968.79	10371.90	13684.48	13643.39
01/01/2011-31/01/2011	23704.19	137.64	12140.30	12074.86	11884.12	11746.48
01/02/2011-28/02/2011	16295.58	154.47	9602.20	7052.06	9395.40	9240.93
01/03/2011-31/03/2011	17812.97	40.76	8994.36	9096.99	8855.96	8815.20
01/04/2011-30/04/2011	18562.89	61.44	9500.34	9319.80	9370.48	9309.04
Total	129832.08	462.04	68623.07	63613.15	67366.60	66904.55

Table 3 calculation of BE_y

Period		EG _y (MWh)	EF _{grid, CM, y} (tCO ₂ e/MWh)	BE _y (tCO ₂ e)
Start	End	O	P	Q=O*P
30/10/2010	30/04/2011	66904.55	0.9502	63,573

E.2. Project emissions calculation

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According to the applied methodology, as a renewable energy project, the project emissions of this project are zero.

E.3. Leakage calculation

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According to the applied methodology, as a renewable energy project, the project leakage of this project is zero.

E.4. Emission reductions calculation / table

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According to the applied methodology, the emission reductions in year y (ER_y) should be calculated as:

$$ER_y = BE_y - PE_y - L_y$$

Total baseline emissions: 63,573tCO₂e

Total project emissions: 0tCO₂e

Total leakage: 0tCO₂e

Total emission reductions: 63,573tCO₂e

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

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Item	Values applied in ex-ante calculation of the registered CDM-PDD	Actual values reached during the monitoring period
Emission reductions (tCO₂e) (30/10/2010 - 30/04/2011)	59,823	63,573

According to the registered PDD, the ex-ante estimated average annual emission reductions are 119,319tCO₂e. This monitoring period covers 183 days, therefore the ex-ante estimated emission reductions should be 59,823tCO₂e as per registered PDD ($119,319 \times 183 / 365 = 59,823$).

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

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The actual emission reductions during this monitoring period are 63,573tCO₂e, about 6.27 percent above the one estimation in the registered PDD.

History of the document

Version	Date	Nature of revision
01	EB 54, Annex 34 28 May 2010	Initial adoption.
Decision Class: Regulatory Document Type: Guideline, Form Business Function: Issuance		