

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

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* 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 02/04/2011

CGN INNER MONGOLIA ZHURIHE PHASE I WIND FARM PROJECT
UNFCCC reference number: 1577
The 1st monitoring period (23/12/2009 - 28/02/2011)

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 I Wind Farm Project is generating renewable electricity utilizing wind power and sells the generated output to the North China Power Grid (NCPG). The ex-ante expected net generation of the project activity is approximately 120,939MWh per year, with a load factor of 27.89%.

Project timeline

Starting date of the project	29/03/2008
Construction start date	01/05/2008
Commissioning start date	04/03/2009
Date of CDM registration	23/12/2009 (PDD version 1.4, dated 18/11/2009)
First renewable crediting period	23/12/2009 - 22/12/2016
Starting date of crediting period	23/12/2009
The first monitoring period	23/12/2009 - 28/02/2011

The total emission reductions achieved in the current monitoring period are 144,680tCO₂e.

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:

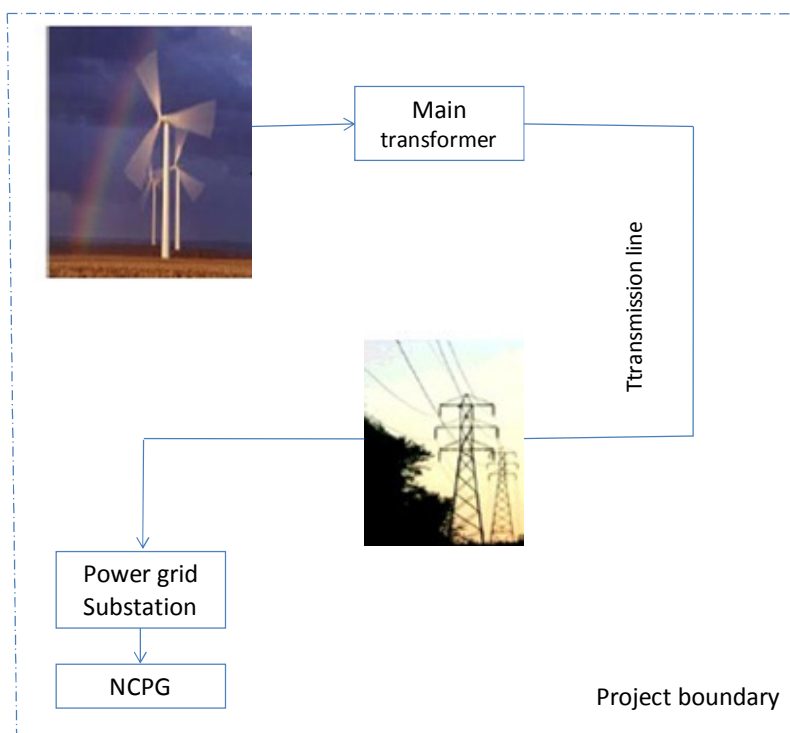
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Host country	People's Republic of China
Province	Inner Mongolia Autonomous Region
City	Zhurihe Town, Xilinguole City
GPS	Latitude 42°27'40"North
coordinates	Longitude 112°46'30" Esat

A.4. Technical description of the project

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Total net annual generation of electricity of the project is estimated to be 120,939 MWh, with an average load factor of 27.89%. 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 07, valid from 14/12/2007 to 04/12/2008) -“Consolidated baseline methodology for grid-connected electricity generation from renewable sources’ and the approved monitoring methodology ACM0002 (version 07, valid from 14/12/2007 to 04/12/2008) - “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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23/12/2009 (PDD version 1.4, dated 18/11/2009)

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	23/12/2009
End date of crediting period	22/12/2016

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. Li Ning, ln@carbonresource.com, Tel: +86 10 8447 5246/8
 - Mr. Zhu Hailei, zhl@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 01/05/2008. The first turbine was commissioned on 04/03/2009, and all the wind turbines have been put into operation gradually till 13/04/2010, 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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Notification will be applied to the proposed project before the request for issuance is submitted.

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 the electricity exports to the grid (TEG_y) and imports from the grid (CEG_y); net electricity supplied to the grid by the project (EG_y) is calculated as exports minus imports.

Currently, the proposed project shares the same transformer, substation and transmission line with one other wind farm, named CGN Inner Mongolia Zhurihe Phase II Wind Farm Project. In accordance of Section 6.2 in Annex 4 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. $M_1 \sim M_4$ are installed in Line 1#~4# respectively to monitor the generation from the proposed project; $M_5 \sim M_8$ are installed in Line 5#~8# 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_{total}).

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

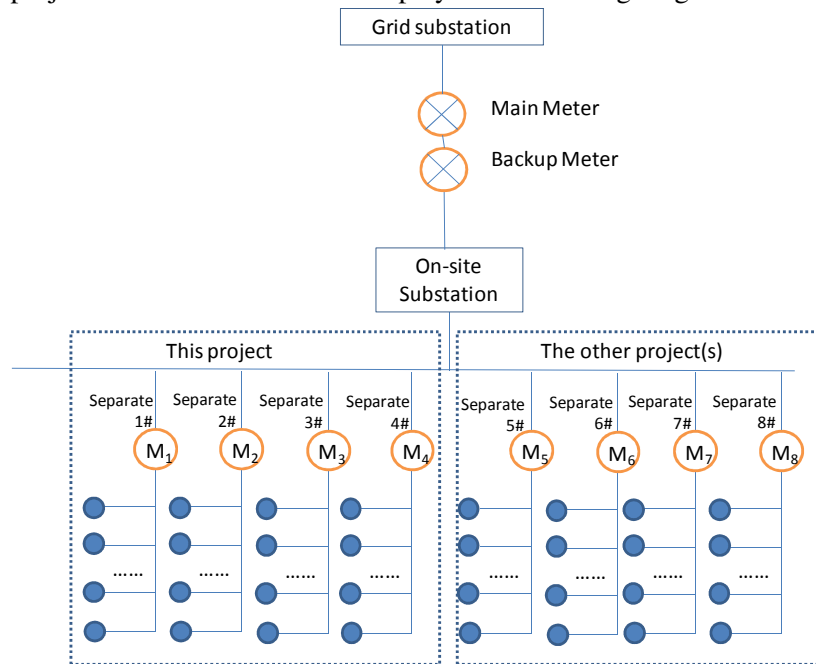
$$EG_{project} = EG_{total} * E_{project} / (E_{project} + E_{others})$$
$$EG_{total} = TEG_y - CEG_y$$

EG_{total} is the total net electricity supplied to the grid based on the data metered by the main meter;

$E_{project}$ is the electricity generation from the project activity metered by the separate meter;

E_{others} is the electricity generation from other projects metered by the other separate meters.

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:



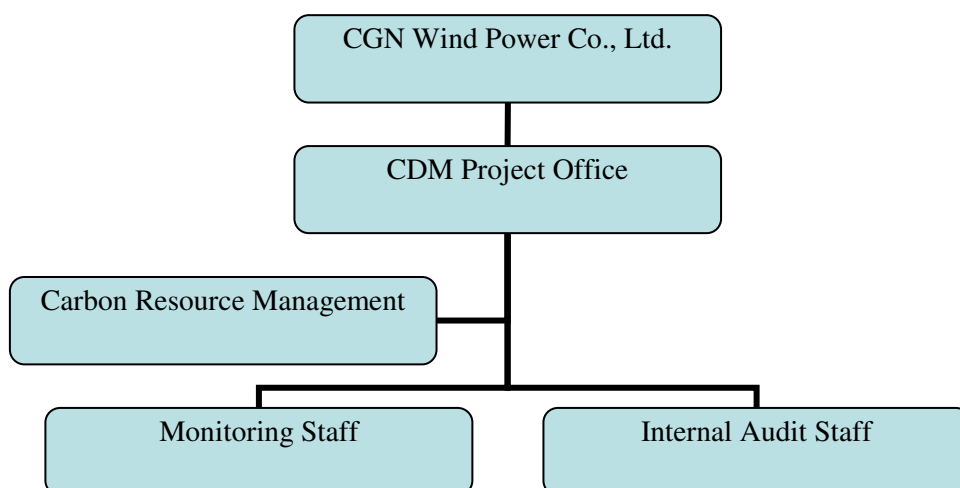
2. Information Flow

- 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 Electricity Transaction Notes (ETNs) to the developer upon the confirmed data;
- The electricity data is cross checked with the ETN issued by the grid company;
- 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.

The operating and management structure of monitoring is illustrated as follows:



4. 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.

Should any previous months 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 within acceptable limits of accuracy or operation is performed improperly the project operator and NCPG shall jointly prepare an reasonable and conservative estimate of the correct reading, and provide sufficient evidence that this estimation is reasonable and conservative.

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) :	1.0548
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_y
Data unit:	MWh
Description:	Net electricity supplied to the grid by the project in period y
Measured /Calculated /Default:	Calculated as calculated as exports minus imports.
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 E1 of the monitoring report. EG _y during this monitoring period is

	137,167.24MWh
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):	$EG_{total} = TEG_y - CEG_y$
QA/QC procedures applied:	Cross checked with the receipts of sales.

SECTION E. Emission reductions calculation

E.1. Baseline emissions calculation

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The baseline emissions in year y is calculated as

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

The detailed calculation of EG_y is calculated below:

Period	EG_y (MWh)	EF (tCO ₂ e/MWh)	BE (tCO ₂ e)	Emission Reductions (tCO ₂ e)
29/04/2010-31/12/2010	137,164.24	1.0548	144,680	144,680

Table 1 the monitored data of the separate meters

	Unit:				MWh
Period	Electricity generation of the proposed project metered by the separate meters				E_{project}
	#1	#2	#3	#4	Total
	A	B	C	D	$E=A+B+C+D$
23/12/2009-31/12/2009	658.67	815.85	836.38	620.46	2931.36
01/01/2010-31/01/2010	4427.16	4587.01	4369.64	3881.38	17265.19
01/02/2010-28/02/2010	1896.02	1943.01	1509.57	1839.82	7188.42
01/03/2010-31/03/2010	3444.49	3985.88	3822.39	3346.30	14599.06
01/04/2010-30/04/2010	1925.97	3289.58	3082.83	2901.08	11199.46
01/05/2010-31/05/2010	2656.71	3931.81	3898.35	3208.23	13695.10
01/06/2010-30/06/2010	1010.19	1581.06	844.98	1825.21	5261.44
01/07/2010-31/07/2010	987.86	1279.01	1069.65	971.94	4308.46
01/08/2010-31/08/2010	1146.10	1052.64	1082.19	1455.16	4736.09
01/09/2010-30/09/2010	1115.58	1577.43	1374.66	1515.20	5582.87
01/10/2010-31/10/2010	2295.10	2657.58	2748.93	1478.80	9180.41
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
Period	Electricity generation of the other project metered by the other separate meters				E_{others}
	#5	#6	#7	#8	Total
	F	G	H	I	$J=F+G+H+I$
23/12/2009-31/12/2009	0.00	0.00	0.00	0.00	0.00
01/01/2010-31/01/2010	2140.78	4074.14	1929.32	2069.21	10213.45
01/02/2010-28/02/2010	2140.78	4074.14	2321.36	2005.99	10542.27
01/03/2010-31/03/2010	2581.74	2075.97	4099.46	3404.27	12161.44
01/04/2010-30/04/2010	3876.51	3745.21	3442.59	2780.74	13845.05
01/05/2010-31/05/2010	3064.59	3242.26	3213.94	6108.63	15629.42
01/06/2010-30/06/2010	2825.78	2818.61	1256.05	1563.74	8464.18
01/07/2010-31/07/2010	1521.22	1518.29	1220.21	1178.56	5438.28
01/08/2010-31/08/2010	1155.47	949.71	1462.53	1130.15	4697.86
01/09/2010-30/09/2010	1276.86	1185.01	896.58	1572.15	4930.60
01/10/2010-31/10/2010	1642.44	1708.02	2510.92	1878.60	7739.98
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

Table 2 the monitored data of the main meter and calculation of EG_y

Table 2 the monitored data of the main meter and calculation of EG _y					Unit:	MWh
Period	TEG _y	CEG _y	EG _{total}	E _{project}	E _{others}	EG _y
	K	L	M=K-L	E	J	N=M*E/(E+J)
23/12/2009-31/12/2009	2849.82	22.26	2827.56	2931.36	0.00	2827.56
01/01/2010-31/01/2010	26903.67	162.11	26741.56	17265.19	10213.45	16802.07
01/02/2010-28/02/2010	17315.55	193.04	17122.51	7188.42	10542.27	6941.85
01/03/2010-31/03/2010	26067.13	54.87	26012.26	14599.06	12161.44	14190.86
01/04/2010-30/04/2010	24537.58	31.52	24506.06	11199.46	13845.05	10958.67
01/05/2010-31/05/2010	28583.31	29.97	28553.34	13695.10	15629.42	13334.94
01/06/2010-30/06/2010	13373.82	85.32	13288.50	5261.44	8464.18	5093.88
01/07/2010-31/07/2010	9560.11	77.32	9482.79	4308.46	5438.28	4191.78
01/08/2010-31/08/2010	9236.59	63.39	9173.20	4736.09	4697.86	4605.19
01/09/2010-30/09/2010	10316.06	85.59	10230.47	5582.87	4930.60	5432.59
01/10/2010-31/10/2010	16503.87	59.66	16444.21	9180.41	7739.98	8922.05
01/11/2010-30/11/2010	29078.79	24.72	29054.07	15401.40	14167.40	15133.29
01/12/2010-31/12/2010	23845.28	41.09	23804.19	10371.90	13968.79	10143.29
01/01/2011-31/01/2011	23704.19	137.64	23566.55	12074.86	12140.30	11751.43
01/02/2011-28/02/2011	16295.58	154.47	16141.11	7052.06	9602.20	6834.77
Total	278171.35	1222.97	276948.38		143541.22	137164.24

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 are 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: 144,680tCO₂e

Total project emissions: 0tCO₂e

Total leakage: 0tCO₂e

Total emission reductions: 144,680tCO₂e

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) (23/12/2009 - 28/02/2011)	151,332	144,680

According to the registered PDD, the ex-ante estimated average annual emission reductions are 151,332tCO₂e. This monitoring period covers 433 days, therefore the ex-ante estimated emission reductions should be 151,332tCO₂e as per registered PDD ($127,566 \times 433 / 365 = 151,332$).

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

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The actual emission reductions during this monitoring period are 144,680tCO₂e, which is lower than the 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		