



**Monitoring report form**  
**(Version 05.1)**

*Complete this form in accordance with the Attachment "Instructions for filling out the monitoring report form" at the end of this form.*

**MONITORING REPORT**

<b>Title of the project activity</b>	CGN Inner Mongolia Zhurihe Phase II Wind Farm Project	
<b>UNFCCC reference number of the project activity</b>	3453	
<b>Version number of the monitoring report</b>	01	
<b>Completion date of the monitoring report</b>	09/08/2017	
<b>Monitoring period number and duration of this monitoring period</b>	Monitoring period Number: 03 Monitoring period Dates: 01/04/2012 – 31/12/2012 (first and last days included)	
<b>Project participant(s)</b>	CGN Wind Power Co., Ltd. (as the Project owner) Carbon Resource Management Ltd. (as the CER buyer)	
<b>Host Party</b>	People's Republic of China	
<b>Sectoral scope(s)</b>	1: Energy industries (renewable sources)	
<b>Selected methodology(ies)</b>	ACM0002 (version 10) "Consolidated methodology for grid-connected electricity generation from renewable sources"	
<b>Selected standardized baseline(s)</b>	N/A	
<b>Estimated amount of GHG emission reductions or net GHG removals by sinks for this monitoring period in the registered PDD</b>	94,351 tCO <sub>2</sub> e	
<b>Total amount of GHG emission reductions or net GHG removals by sinks achieved in this monitoring period</b>	GHG emission reductions or net GHG removals by sinks reported up to 31 December 2012	GHG emission reductions or net GHG removals by sinks reported from 1 January 2013 onwards
	72,635 tCO <sub>2</sub> e	0 tCO <sub>2</sub> e

## SECTION A. Description of project activity

### A.1. Purpose and general description of project activity

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CGN Inner Mongolia Zhurihe Phase II Wind Farm Project (hereafter referred to as the 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%.

The 25 sets of 2000kW turbines were installed in the Project to generate renewable wind power providing a total installed capacity of 50MW. Total net annual generation of electricity of the Project is estimated to be 125,573 MWh and the annual estimated emission reductions are 119,319tCO<sub>2</sub>e.

Project timeline:

Construction start date	10/04/2009
Commissioning start date	06/01/2010
Full operation date	03/02/2012
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

The total emission reductions achieved in the current monitoring period from 01/04/2012 to 31/12/2012 are 72,635tCO<sub>2</sub>e.

### A.2. Location of project activity

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

### A.3. Parties and project participant(s)

Party involved (host) indicates a host Party	Private and/or public entity(ies) project participants (as applicable)	Indicate whether the Party involved wishes to be considered as project participant (yes/no)
People's Republic of China (host)	CGN Wind Power Co., Ltd.	No
United Kingdom of Great Britain and Northern Ireland	Carbon Resource Management Ltd.	No

### A.4. Reference of applied methodology and standardized baseline

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

"Tool for the demonstration and assessment of additionality" (version 05.2) and "Tool to calculate the emission factor for an electricity system" (version 02) are also applied to the Project. These documents are available from: <http://cdm.unfccc.int/Reference/tools/index.html>

**A.5. Crediting period of project activity**

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Crediting period	Renewable crediting period (7 years x3)
Starting date of crediting period	30/10/2010
End date of crediting period	29/10/2017

**A.6. Contact information of responsible persons/entities**

&gt;&gt;

CGN Wind Power Co., Ltd.

Technical Manager: Lei Shi

Address: No.2 Building, Area 12 of Advanced Business Park, No.188 west of South 4th ring road, Beijing, China

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Tel: +86 10 63705651

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**SECTION B. Implementation of project activity****B.1. Description of implemented registered project activity**

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The project activity was started construction on 10/04/2009. The first turbine was commissioned on 06/01/2010 and put into fully operation on 03/02/2012, all the turbines were 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. Post-registration changes****B.2.1. Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline**

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There is no any temporary deviations have been applied during this monitoring period.

**B.2.2. Corrections**

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There is no any corrections to project information or parameters fixed at validation have been approved during this monitoring period.

**B.2.3. Changes to start date of crediting period**

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There is no any changes to the start date of the crediting period have been approved during this monitoring period or submitted with this monitoring period.

**B.2.4. Inclusion of a monitoring plan to the registered PDD that was not included at registration**

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NA

**B.2.5. Permanent changes from registered monitoring plan, applied methodology or applied standardized baseline**

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There is no permanent change from registered monitoring plan or applied methodology or applied standardized baseline.

**B.2.6. Changes to project design of registered project activity**

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

**B.2.7. Types of changes specific to afforestation or reforestation project activity**

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NA

**SECTION C. Description of monitoring system**

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**1. Monitoring system and data collection**

Currently, the project activity shares the same transformer, substation and transmission line with two other wind farms, named CGN Inner Mongolia Zhurihe Phase I Wind Farm Project (UNFCCC ref. No. 1577, hereafter referred to as Project A) and CGN Inner Mongolia Zhurihe Phase III Wind Farm Project (undergoing validation, hereafter referred to as Project B). In accordance with Section B.7.2 of the registered PDD, if the project activity has to share the same transformer, substation or transmission line with some other wind farms, appropriate additional meters are installed. Therefore, separate meters M1~M12 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. M5~M8 are installed in Line5#~8# respectively to monitor the generation from the project activity; M1~M4 are installed in Line1#~4# respectively to monitor the generation from Project A and M9~M12 are installed in Line9#~12# respectively to monitor the generation from Project B.

The total exported electricity generated by the Project, Project A and Project B and the total imported electricity from the grid purchased by the Project, Project A and Project B is continuously measured by the main meter installed at the Wenduer substation. This main meter is bidirectional, recording both electricity delivered to the grid and electricity purchased from the grid

The net electricity supplied by the project activity ( $EG_{\text{facility},y}$ ) is calculated as follows:

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

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

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

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

$EG_{\text{export},y}$  is the quantity of annual electricity delivered to the grid by the Project;

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

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

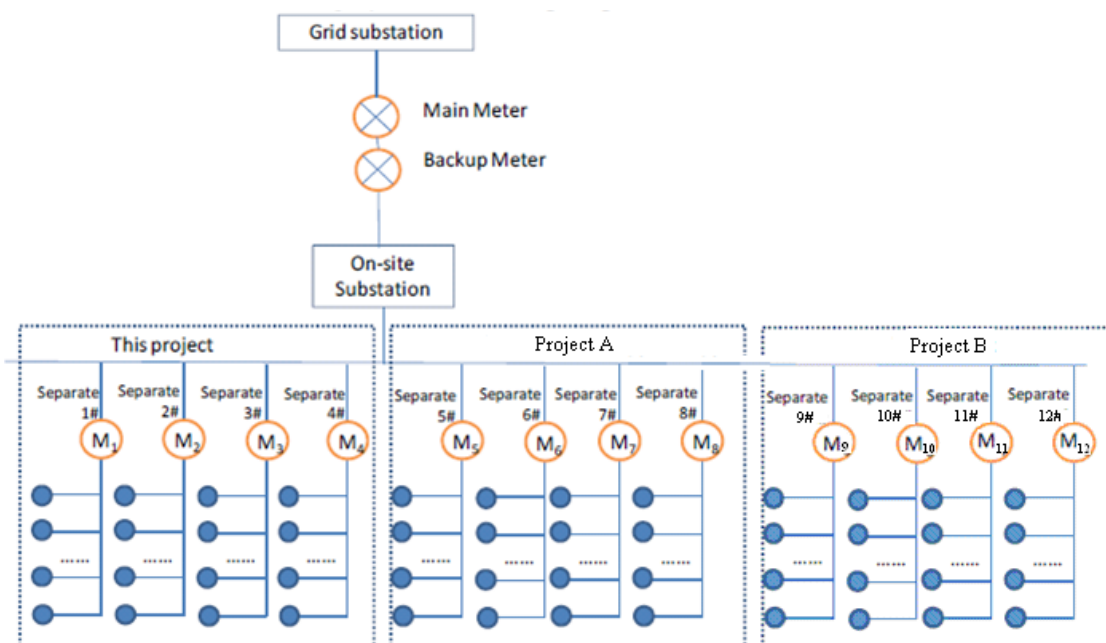
$EG_{import, y}$  is the quantity of annual electricity purchased from the grid by the Project,  $EG_{import, y} = EG_{import, total}$  which is conservative

$EG_{project}$  is the electricity generation of the Project based on the data metered by separate meters at the project site;

$EG_{others}$  is the electricity generation of Project A and Project B based on the data metered by other separate meters;

$EG_{facility, y}$  and  $EG_y$  is the net electricity supplied to the grid by the Project.

The location of the main meter, backup meter, separate meters in transmission lines in relation to the grid, the Project, Project A and Project B 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;

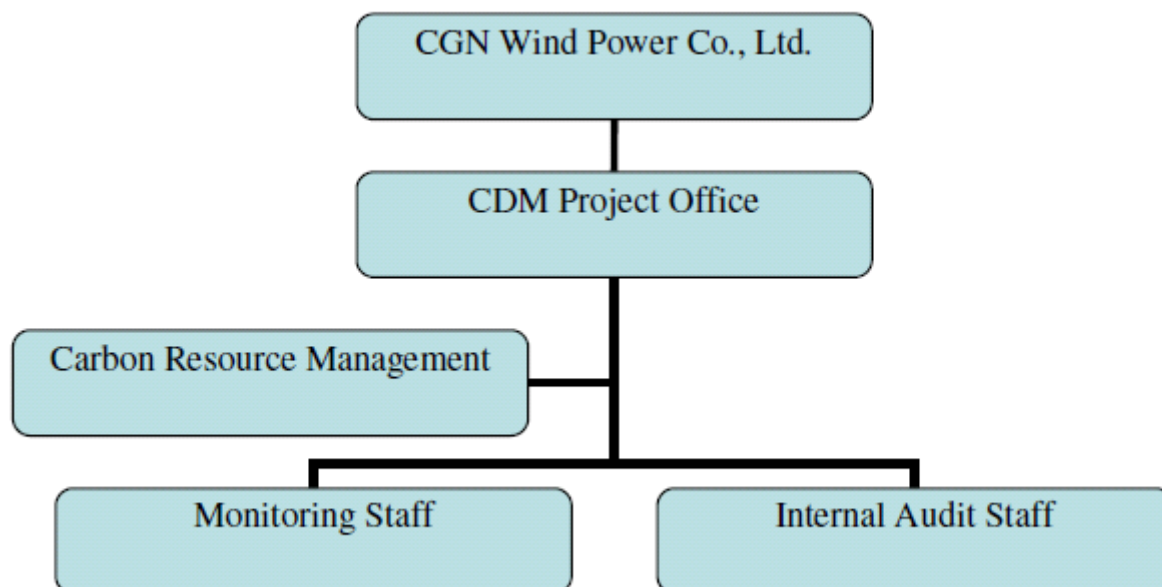
The electricity data of the separate meters is cross checked with the ETNs issued by the grid company;

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 annually 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) Firstly, 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 fixed ex ante or at renewal of crediting period

<b>Data/parameter:</b>	<b>EF<sub>grid,CM,y</sub></b>
Unit	tCO <sub>2</sub> /MWh
Description	Combined margin emission factor
Source of data	Registered PDD
Value(s) applied)	0.9502
Choice of data or measurement methods and procedures	NA
Purpose of data	Baseline emission calculation
Additional comments	The baselines emission factor was determined ex ante and will be used throughout the first crediting period.

## D.2. Data and parameters monitored

Data/parameter:	<b>EG<sub>facility,y</sub></b>
Unit	MWh
Description	Net electricity supplied to the grid by the Project in period y
Measured/calculated/default	Calculated as export of electricity (EG <sub>export, y</sub> ) minus consumption of electricity (EG <sub>import, y</sub> ).
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 <sub>facility,y</sub> during this monitoring period is 65,717.85 MWh.
Monitoring equipment	-
Measuring/reading/recording frequency:	Continuously measurement and monthly recording
Calculation method (if applicable):	$EG_{facility,y} = EG_{export,y} - EG_{import,y}$
QA/QC procedures:	-
Purpose of data:	Baseline emission calculation
Additional comments:	-

Data/parameter:	<b>EG<sub>export, y</sub></b>
Unit	MWh
Description	The quantity of annual electricity delivered to the grid by the Project
Measured/calculated/default	It is monitored continuously through main meter
Source of data	Monthly reading records of the main meter
Value(s) of monitored parameter	Detailed monthly data and calculation is presented in section E.1 of the monitoring report.
Monitoring equipment	-
Measuring/reading/recording frequency:	Continuously measurement and monthly recording
Calculation method (if applicable):	$EG_{export,y} = EG_{export, total} * EG_{project} / (EG_{project} + EG_{others})$ EG <sub>export, total</sub> is total exported electricity to the grid based on the data metered by the main meter at the substation; EG <sub>project</sub> is the electricity generation of the Project based on the data metered by separate meters at the project site; EG <sub>others</sub> is the electricity generation of Project A and Project B based on the data metered by other separate meters;
QA/QC procedures:	1. The export electricity supply to the grid is checked by receipt (ETNs). 2. When the main meter fails to work normally, the readings of the back-up meter will be adopted. 3. The data will be kept during the crediting period and two years after. 4. The main meter will be calibrated once per year by a qualified calibration organization in accordance with industry standards.
Purpose of data:	Baseline emission calculation
Additional comments:	-

Data/parameter:	<b>EG<sub>import, y</sub></b>
Unit	MWh
Description	The quantity of annual electricity purchased from the grid by the Project.
Measured/calculated/default	It is monitored continuously through main meter
Source of data	Monthly reading records of the main meter
Value(s) of monitored parameter	Detailed monthly data and calculation is presented in section E.1 of the monitoring report.

Monitoring equipment	-
Measuring/reading/recording frequency:	Continuously measurement and monthly recording
Calculation method (if applicable):	-
QA/QC procedures:	1. The export electricity supply to the grid is checked by receipt (ETNs). 2. When the main meter fails to work normally, the readings of the back-up meter will be adopted. 3. The data will be kept during the crediting period and two years after. 4. The main meter will be calibrated once per year by a qualified calibration organization in accordance with industry standards.
Purpose of data:	Baseline emission calculation
Additional comments:	-

### D.3. Implementation of sampling plan

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The parameters monitored described in section D.2 above do not involve the sampling approach.

## SECTION E. Calculation of emission reductions or GHG removals by sinks

### E.1. Calculation of baseline emissions or baseline net GHG removals by sinks

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The baseline emission  $BE_y$  (tCO<sub>2</sub>) during the monitoring period results from:

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

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 A metered by the separate meters				EG <sub>others,A</sub>
	#1	#2	#3	#4	Total
	A	B	C	D	E=A+B+C+D
01/04/2012-30/04/2012	3724.35	3593.94	3336.27	3474.24	14,128.80
01/05/2012-31/05/2012	2815.05	2973.38	2790.27	2748.27	11,326.97
01/06/2012-30/06/2012	2738.76	2697.38	2094.82	2716.66	10,247.62
01/07/2012-31/07/2012	1243.27	1279.05	1146.98	1059.89	4,729.19
01/08/2012-31/08/2012	1035.53	1,108.75	1,027.64	1,087.51	4,259.43
01/09/2012-30/09/2012	1336.64	1,415.31	1,497.14	1,445.69	5,694.78
01/10/2012-31/10/2012	1898.05	1,998.53	2,096.51	2,594.45	8,587.54
01/11/2012-30/11/2012	2006.84	2,108.77	2,396.57	2,439.49	8,951.67
01/12/2012-31/12/2012	2,190.75	2,015.08	2,217.88	2,298.12	8,721.83
Period	Electricity generation of the project activity metered by the separate meters				EG <sub>projec</sub>
	#5	#6	#7	#8	Total
	F	G	H	I	J=F+G+H+I
01/04/2012-30/04/2012	3457.23	2867.56	3798.06	3030.72	13,153.57
01/05/2012-31/05/2012	3038.91	2363.55	3414.81	2557.17	11,374.44



01/06/2012-30/06/2012	2670.45	2617.69	2693.8	2375.04	10,356.98
01/07/2012-31/07/2012	1307.26	1135.9	1274.32	1262.87	4,980.35
01/08/2012-31/08/2012	1,168.55	1,289.73	1,071.63	1,228.07	4,757.98
01/09/2012-30/09/2012	1,673.08	1,779.65	1,506.29	1,469.70	6,428.72
01/10/2012-31/10/2012	2,407.53	2,514.87	2,185.39	1,855.02	8,962.81
01/11/2012-30/11/2012	1,725.46	1,883.69	1,989.41	2,073.36	7,671.92
01/12/2012-31/12/2012	1,862.70	1,905.16	1,739.28	1,834.15	7,341.29
Period	Electricity generation of the other Project B metered by the separate meters				EG <sub>others,B</sub>
	#9	#10	#11	#12	Total
	K	L	M	N	O=K+L+M+N
01/04/2012-30/04/2012	3646.65	3427.38	3213.84	3291.54	13,579.41
01/05/2012-31/05/2012	2971.5	2892.18	2629.41	2687.37	11,180.46
01/06/2012-30/06/2012	2531.47	2398.06	2213.73	2181.06	9,324.32
01/07/2012-31/07/2012	1301.54	1235.1575	1128.76	1194.6525	4,860.11
01/08/2012-31/08/2012	1,215.72	1,206.37	1,135.45	1,104.26	4,661.80
01/09/2012-30/09/2012	1,370.35	1,518.21	1,318.12	1,553.63	5,760.30
01/10/2012-31/10/2012	2,099.01	2,076.87	2,046.74	2,004.34	8,226.96
01/11/2012-30/11/2012	1,872.12	1,841.98	1,791.85	1,781.45	7,287.39
01/12/2012-31/12/2012	1,804.28	1,765.14	1,724.01	1,722.61	7,016.04

The monitored data of the main meter and calculation of EG<sub>y</sub> (Unit: MWh):

Period	EG <sub>project</sub>	EG <sub>others</sub>		EG <sub>export, total</sub>	EG <sub>export, y</sub>	EG <sub>import, y</sub>	EG <sub>y</sub>
	J	EG <sub>others,A</sub>	EG <sub>others,B</sub>				
		E	O	P	Q	R	S
01/04/2012-30/04/2012	14,128.80	13,153.57	13,579.41	40604.03	14,039.68	61.44	13,978.24
01/05/2012-31/05/2012	11,326.97	11,374.44	11,180.46	33581.87	11,226.68	24.52	11,202.16
01/06/2012-30/06/2012	10,247.62	10,356.98	9,324.32	29709.65	10,172.54	56.79	10,115.75
01/07/2012-31/07/2012	4,729.19	4,980.35	4,860.11	14394.73	4,672.41	177.21	4,495.20
01/08/2012-31/08/2012	4,259.43	4,757.98	4,661.80	13,503.57	4,204.74	90.77	4,113.97
01/09/2012-30/09/2012	5,694.78	6,428.72	5,760.30	17,723.15	5,643.62	108.00	5,535.62
01/10/2012-31/10/2012	8,587.54	8,962.81	8,226.96	25,587.53	8,524.32	66.85	8,457.47
01/11/2012-30/11/2012	8,951.67	7,671.92	7,287.39	23,741.05	8,888.05	36.18	8,851.87
01/12/2012-31/12/2012	8,721.83	7,341.29	7,016.04	25,866.42	9,775.16	82.96	9,692.20
Total	-	-	-	-	-	-	76,442.48

Calculation of BE<sub>y</sub>:

Period		EG <sub>y</sub> (MWh)	EF <sub>grid, CM, y</sub> (tCO <sub>2</sub> /MWh)	BE <sub>y</sub> (tCO <sub>2</sub> e)
Start	End	T	U	V=T*U
01/04/2012	31/12/2012	76,442.48	0.9502	72,635

## E.2. Calculation of project emissions or actual net GHG removals by sinks

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According to the applied methodology, for the project is a renewable energy project activity, hence, PE<sub>y</sub> = 0 tCO<sub>2</sub>e.

**E.3. Calculation of leakage**

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According to the applied methodology, no leakage is considered for the project.

**E.4. Summary of calculation of emission reductions or net GHG removals by sinks**

Item	Baseline emissions or baseline net GHG removals by sinks (t CO <sub>2</sub> e)	Project emissions or actual net GHG removals by sinks (t CO <sub>2</sub> e)	Leakage (t CO <sub>2</sub> e)	GHG emission reductions or net GHG removals by sinks (t CO <sub>2</sub> e) achieved in the monitoring period		
				Up to 31/12/2012	From 01/01/2013	Total amount
<b>Total</b>	72,635	0	0	72,635	0	72,635

**E.5. Comparison of actual emission reductions or net GHG removals by sinks with estimates in registered PDD**

Item	Values estimated in ex ante calculation of registered PDD	Actual values achieved during this monitoring period
Emission reductions or GHG removals by sinks (t CO <sub>2</sub> e)	94,351	72,635

**E.6. Remarks on difference from estimated value in registered PDD**

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The comparison shows that the actual emission reduction is lower than the expectation in the registered PDD.

## Appendix 1. Contact information of project participants and responsible persons/entities

<b>Project participant and/or responsible person/ entity</b>	<input checked="" type="checkbox"/> Project participant <input type="checkbox"/> Person/entity responsible for completing the CDM-MR-FORM
<b>Organization name</b>	CGN Wind Power Co., Ltd.
<b>Street/P.O. Box</b>	No.188 west of South 4th ring road, Fengtai District
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<b>City</b>	Beijing
<b>State/region</b>	-
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<b>Country</b>	People's Republic of China
<b>Telephone</b>	+86-10-63705651
<b>Fax</b>	+86-10-63705875
<b>E-mail</b>	larnhart@hotmail.com
<b>Website</b>	-
<b>Contact person</b>	Shi Lei
<b>Title</b>	-
<b>Salutation</b>	Mr.
<b>Last name</b>	Shi
<b>Middle name</b>	-
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**Document information**

<i>Version</i>	<i>Date</i>	<i>Description</i>
05.1	4 May 2015	Editorial revision to correct version numbering.
05.0	1 April 2015	Revisions to: <ul style="list-style-type: none"> <li>• Include provisions related to delayed submission of a monitoring plan;</li> <li>• Provisions related to the Host Party;</li> <li>• Remove reference to programme of activities;</li> <li>• Overall editorial improvement.</li> </ul>
04.0	25 June 2014	Revisions to: <ul style="list-style-type: none"> <li>• Include the Attachment: Instructions for filling out the monitoring report form (these instructions supersede the "Guideline: Completing the monitoring report form" (Version 04.0));</li> <li>• Include provisions related to standardized baselines;</li> <li>• Add contact information on a responsible person(s)/ entity(ies) for completing the CDM-MR-FORM in A.6 and Appendix 1;</li> <li>• Change the reference number from <i>F-CDM-MR</i> to <i>CDM-MR-FORM</i>;</li> <li>• Editorial improvement.</li> </ul>
03.2	5 November 2013	Editorial revision to correct table in page 1.
03.1	2 January 2013	Editorial revision to correct table in section E.5.
03.0	3 December 2012	Revision required to introduce a provision on reporting actual emission reductions or net GHG removals by sinks for the period up to 31 December 2012 and the period from 1 January 2013 onwards (EB70, Annex 11).
02.0	13 March 2012	Revision required to ensure consistency with the "Guidelines for completing the monitoring report form" (EB 66, Annex 20).
01	28 May 2010	EB 54, Annex 34. Initial adoption.
Decision Class: Regulatory Document Type: Form Business Function: Issuance Keywords: monitoring report		