

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 01 and date 09/04/2012
CGN INNER MONGOLIA ZHURIHE PHASE II WIND FARM PROJECT
CDM registration reference number: 3453
2nd Monitoring Period: 01/05/2011-31/03/2012

SECTION A. General description of the project activity

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

>>

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%.

Project timeline

Starting date of the Project	15/03/2009
Construction start date	10/04/2009
Commissioning start date	06/01/2010
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 62,445 tCO₂e.

A.2. Project Participants

>>

Name of Party involved	Private and/or public entity(ies) project participants	Kindly indicate if the 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
Switzerland	Carbon Resource Management S.A.	

A.3. Location of the project activity:

>>

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

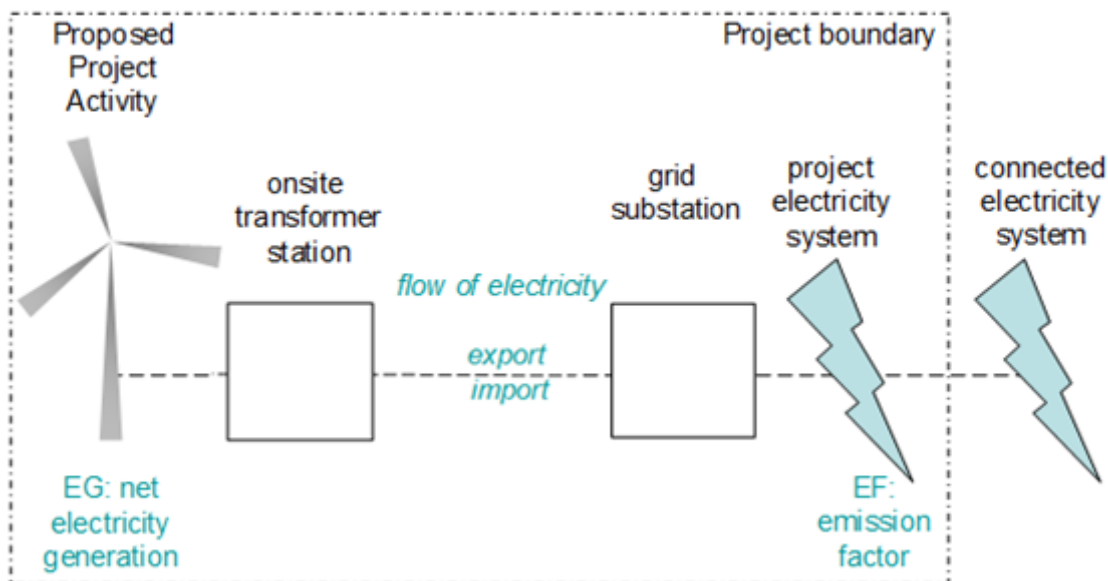
>>

The 25 sets of 2000kW turbines were installed in the Project to generate renewable wind power. 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 Key Technology Parameters are listed in the table below:

Key Technology Parameter	Value
Rotor diameter (m)	80

Swept area(m2)	5027
Cut-in wind speed (m/s)	3
Rated wind speed (m/s)	13.5
Cut-out wind speed (m/s)	25
Hub height of the wind turbines (m)	80
Capacity(kW)	2000
Rated voltage(V)	690

The electricity generated by the project activity is exported through the transmission line from the on-site substation to the substation of the power grid and transmitted the North China Power Grid (NCPG) which connects with Northeast Power Grid (NEPG) and Central China Power Grid (CCPG).



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

>>

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.6. Registration date of the project activity:

>>

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):

>>

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):

>>

Name of person/entity completing the monitoring report:

Ms. Lin, Wei / Mr. Guan, Yisong
Easy Carbon Consultancy Co., Ltd.
13-801, Jianwai SOHO, 39 Dongsanhuan Zhonglu, Chaoyang District, Beijing 100022, P. R. China
Phone/fax: +86 10 58697044/59000064
Email: tonilin@easy-carbon.com / gyisong@easy-carbon.com

Easy Carbon Consultancy Co., Ltd is not Project Participant.

SECTION B. Implementation of the project activity

B.1. Implementation status of the project activity

>>

The project activity was started construction on 10/04/2009. The first turbine was commissioned on 06/01/2010 and 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. Revision of the monitoring plan

>>

The monitoring plan of the Project as described in the registered CDM-PDD has not been revised.

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

>>

There is no deviation request proposed for the current monitoring period.

B.4. Notification or request of approval of changes

>>

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

>>

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 will be 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 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 and electricity purchased from the grid

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

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

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

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

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

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

$EG_{\text{export, total}}$ 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;

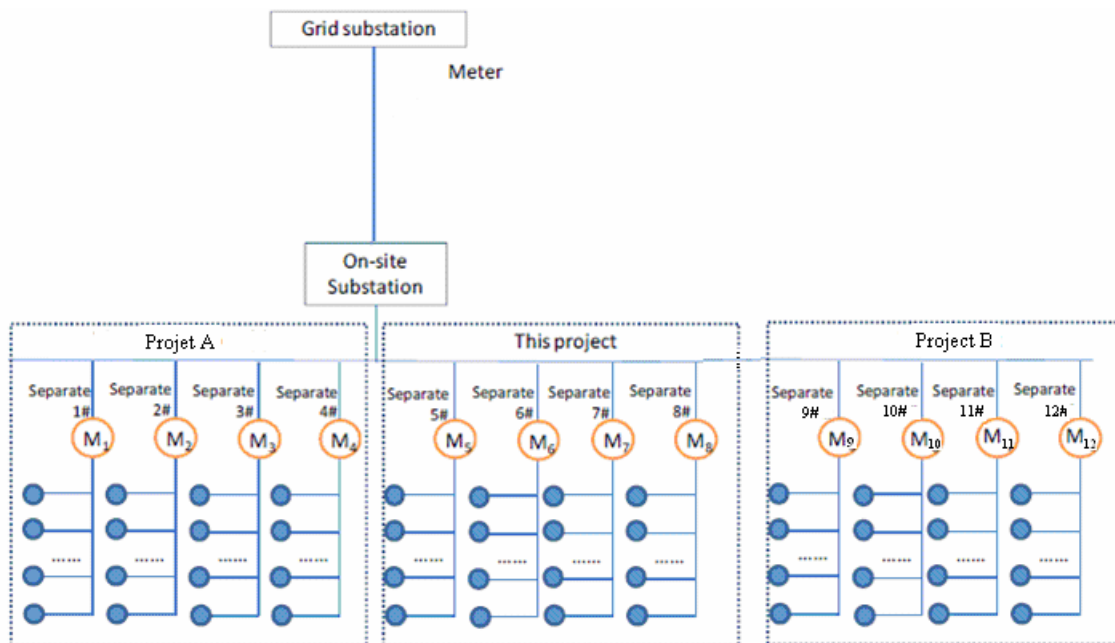
$EG_{\text{import, y}}$ is the quantity of annual electricity purchased from the grid by the Project. To be conservative, when the $EG_{\text{facility, y}}$ is calculated, $EG_{\text{import, total}}$ including the electricity purchased from the grid by Project A and Project B is fully deducted.

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;

$EG_{\text{facility, y}}$ 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:



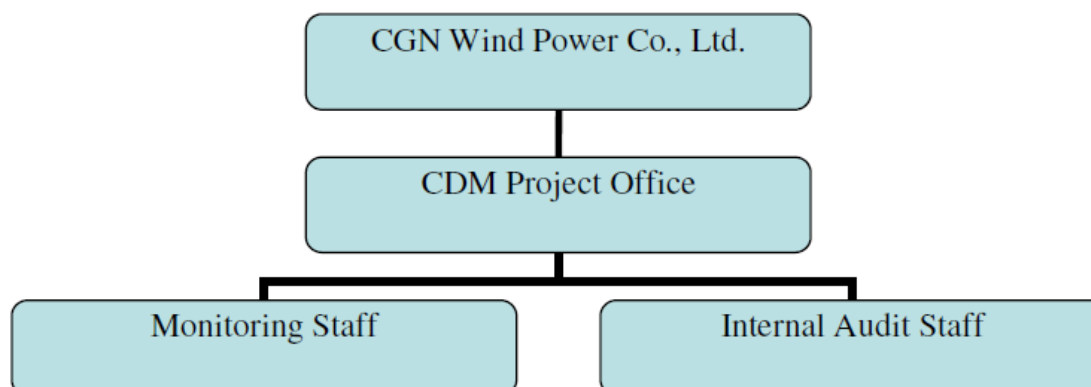
2. Information Flow

- 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 supplies readings of the main meter (including $EG_{\text{export, total}}$ and $EG_{\text{import, total}}$) to the project owner for confirmation purpose;
- Each month, the grid company issues electricity sales receipts to the developer upon the confirmed data;
- The electricity data of the separate meters is cross checked with the electricity sales receipts issued by the grid company;

- The project developer provides the power grid company with electricity sales receipts after the power grid company has confirmed the electricity sales receipts, and archives a copy of the electricity sales receipts;
- 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.. 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 is illustrated as follows:



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:

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

Data / Parameter:	EF _{grid, CM,y}
Data unit:	tCO ₂ e/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)	Baseline emission calculations

calculations)	
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 65,717.85 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 were calibrated annually. The accuracy for the main meters is 0.2s and 0.5s for the separate meters.
Measuring/ Reading/ Recording frequency:	Measuring continuously and recording monthly
Calculation method (if applicable):	$EG_{facility,y} = EG_{export,y} - EG_{import,y}$
QA/QC procedures applied:	Cross checked with the receipts.

D.2. Data and parameters monitored	
Data / Parameter:	$EG_{export,y}$
Data 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 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 66,781.67 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 were calibrated annually. The accuracy for the main meters is 0.2s and 0.5s for the separate meters.
Measuring/ Reading/ Recording frequency:	Measuring continuously/ Recording monthly
Calculation method (if applicable):	$EG_{export,y} = EG_{export,total} * EG_{project} / (EG_{project} + EG_{others})$ $EG_{export,y}$ is the quantity of annual electricity delivered to the grid by the Project; $EG_{export,total}$ is total exported electricity to the grid based on the data metered by the main meter at the substation; $EG_{project}$ 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;
QA/QC procedures applied:	Cross checked with the receipts.

D.2. Data and parameters monitored	
Data / Parameter:	EG _{import, y}
Data 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. EG _{import, y} during this monitoring period is 1052.19 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 were calibrated annually. The accuracy for the main meters is 0.2s and 0.5s for the separate meters.
Measuring/ Reading/ Recording frequency:	EG _{import, y} = EG _{import, total} , the electricity meter measures continuously and accumulatively. The data is recorded monthly.
Calculation method (if applicable):	/
QA/QC procedures applied:	Cross checked with the receipts.

SECTION E. Emission reductions calculation

E.1. Baseline emissions calculation

>>

The baseline emission BE_y (tCO₂) 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 _{others,A}
	#1	#2	#3	#4	Total
	A	B	C	D	E=A+B+C+D
01/05/2011-31/05/2011	3,573.78	4,058.46	3,657.36	3,289.65	14,579.25
01/06/2011-30/06/2011	1,551.90	1,534.26	1,564.29	1,233.54	5,883.99
01/07/2011-31/07/2011	1,663.41	1,674.54	1,322.16	1,242.36	5,902.47
01/08/2011-31/08/2011	1,184.82	1,102.29	1,045.80	1,157.94	4,490.85
01/09/2011-30/09/2011	968.52	1,196.16	1,023.96	1,055.88	4,244.52
01/10/2011-31/10/2011	1,126.65	1,293.39	1,288.14	1,342.95	5,051.13
01/11/2011-30/11/2011	1,321.53	1,121.82	1,188.60	962.85	4,594.80
01/12/2011-31/12/2011	1,233.75	1,115.52	1,166.55	961.16	4,476.98
01/01/2012-31/01/2012	1,495.62	1,128.96	1,190.07	925.48	4,740.13
01/02/2012-29/02/2012	1,509.90	1,214.42	944.79	1,020.39	4,689.50
01/03/2012-31/03/2012	1,802.39	1,974.18	1,492.43	2,718.83	7,987.83
Period	Electricity generation of the other Project B metered by the separate meters				EG _{others,B}
	#9	#10	#11	#12	Total
	F	G	H	I	J=F+G+H+I
01/05/2011-31/05/2011	3,989.37	3,942.12	3,511.41	3,693.06	15,135.96
01/06/2011-30/06/2011	2,165.94	2,088.24	1,992.69	1,980.72	8,227.59
01/07/2011-31/07/2011	2,120.79	2,059.68	1,901.97	1,900.92	7,983.36
01/08/2011-31/08/2011	1,590.33	1,575.00	1,523.55	1,517.46	6,206.34
01/09/2011-30/09/2011	1,534.89	1,514.73	1,408.47	1,410.36	5,868.45
01/10/2011-31/10/2011	1,659.42	1,651.65	1,561.77	1,566.39	6,439.23
01/11/2011-30/11/2011	1,410.36	1,368.99	1,174.11	1,266.51	5,219.97
01/12/2011-31/12/2011	1,685.88	1,690.92	1,447.74	1,531.32	6,355.86
01/01/2012-31/01/2012	1,382.01	1,445.22	1,247.19	1,336.65	5,411.07
01/02/2012-29/02/2012	1,961.19	1,952.58	1,672.86	1,785.63	7,372.26
01/03/2012-31/03/2012	2,334.95	2,383.46	2,013.65	2,106.47	8,838.53
Period	Electricity generation of the project activity metered by the other separate meters				EG _{project}
	#5	#6	#7	#8	Total
	K	L	M	N	O=K+L+M+N
01/05/2011-31/05/2011	3,624.81	3,846.36	3,827.46	3,620.40	14,919.03
01/06/2011-30/06/2011	1,630.65	1,742.58	1,944.39	1,739.43	7,057.05
01/07/2011-31/07/2011	1,338.54	1,761.27	1,844.01	1,734.39	6,678.21
01/08/2011-31/08/2011	1,192.80	1,263.78	1,430.10	1,227.66	5,114.34
01/09/2011-30/09/2011	1,242.99	1,253.49	1,359.96	1,142.82	4,999.26
01/10/2011-31/10/2011	1,474.41	1,291.29	1,605.03	1,445.22	5,815.95
01/11/2011-30/11/2011	1,062.60	1,026.90	1,243.19	1,077.72	4,410.41
01/12/2011-31/12/2011	926.31	1,307.25	1,530.91	1,086.54	4,851.01
01/01/2012-31/01/2012	832.44	1,029.00	1,025.01	1,064.91	3,951.36
01/02/2012-29/02/2012	847.14	1,019.12	965.16	1,147.44	3,978.86
01/03/2012-31/03/2012	1,292.72	1,445.18	1,615.07	1,588.19	5,941.16

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
					Project A	Project B		
From	To	P	Q	O	E	J	R=P*O/(O+E+J)	S=R-Q
01/05/2011	31/05/2011	44,355.33	24.52	14,919.03	14,579.25	15,135.96	14,825.80	14,801.28
01/06/2011	30/06/2011	20,983.34	57.23	7,057.05	5,883.99	8,227.59	6,995.27	6,938.04

01/07/2011	31/07/2011	20,376.70	93.17	6,678.21	5,902.47	7,983.36	6,617.37	6,524.20
01/08/2011	31/08/2011	15,596.27	102.78	5,114.34	4,490.85	6,206.34	5,044.71	4,941.93
01/09/2011	30/09/2011	14,937.28	98.79	4,999.26	4,244.52	5,868.45	4,941.38	4,842.59
01/10/2011	31/10/2011	17,110.49	87.88	5,815.95	5,051.13	6,439.23	5,750.14	5,662.26
01/11/2011	30/11/2011	13,999.11	142.98	4,410.41	4,594.80	5,219.97	4,340.31	4,197.33
01/12/2011	31/12/2011	15,284.37	138.65	4,851.01	4,476.98	6,355.86	4,727.45	4,588.80
01/01/2012	31/01/2012	13,674.97	166.12	3,951.36	4,740.13	5,411.07	3,831.55	3,665.43
01/02/2012	29/02/2012	15,617.97	90.25	3,978.86	4,689.50	7,372.26	3,874.02	3,783.77
01/03/2012	31/03/2012	22,355.61	61.45	5,941.16	7,987.83	8,838.53	5,833.67	5,772.22

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	N	T	U=N*T
01/05/2011	31/03/2012	65,717.85	0.9502	62,445

E.2. Project emissions calculation

>>

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

E.3. Leakage calculation

>>

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

E.4. Emission reductions calculation / table

>>

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: 62,445 tCO₂e

Total project emissions: 0tCO₂e

Total leakage: 0tCO₂e

Total emission reductions: 62,445 tCO₂e

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

>>

Item	Values applied in ex-ante calculation of the registered CDM-PDD	Actual values reached during the monitoring period
Emission reductions (tCO₂e)	109,839 (119,319*336/365=109,839)	62,445

According to the registered PDD, the ex-ante estimated average annual emission reductions are 62,445 tCO₂e. This monitoring period covers 336 days, therefore the ex-ante estimated emission reductions should be 109,839 tCO₂e as per registered PDD.

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

>>

The actual emission reductions during this monitoring period are 62,445 tCO₂e, about 43.15% 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		