



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

Title of the project activity	Hebei Guyuan County Dongxinying 199.5MW Wind Power Project	
UNFCCC reference number of the project activity	4853	
Version number of the monitoring report	01	
Completion date of the monitoring report	21/03/2016	
Monitoring period number and duration of this monitoring period	4 th monitoring period 01/01/2013-30/09/2015	
Project participant(s)	Hebei Construction Investment New Energy Co., Ltd. Vattenfall Energy Trading Netherlands N.V.	
Host Party	People's Republic of China	
Sectoral scope(s)	Sectoral scope 1: energy industries (renewable sources)	
Selected methodology(ies)	Approved consolidated baseline and monitoring methodology ACM0002 (version 12): Consolidated methodology for grid-connected electricity generation from renewable sources.	
Selected standardized baseline(s)	Not applicable	
Estimated amount of GHG emission reductions or net GHG removals by sinks for this monitoring period in the registered PDD	1,175,944 ¹	
Total amount of GHG emission reductions or net GHG removals by sinks achieved in this monitoring period	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
	0tCO ₂ e	960,887tCO ₂ e

¹ The annual emission reductions in the registered PDD version7 is 427,936tCO₂e, therefore, the estimated total emission reductions for this monitoring period in the registered PDD for this monitoring period (2 years and 273 days) is 1,175,944 tCO₂e (i.e. 427,936/365*(365*2+273)).

SECTION A. Description of project activity

A.1. Purpose and general description of project activity

The objective of Hebei Guyuan County Dongxinying 199.5MW Wind Power Project (hereinafter referred to as the project) is to generate electricity using wind energy and to sell the generated output to North China Power Grid (NCPG). Total installed capacity of the project is 199.5MW, involving 133 sets of wind turbine-generator (hereinafter referred to as WTG), each set with a rated capacity of 1.5MW. Applying grid-connected electricity generation by wind energy technology and by displacing equal amount electricity generated by NCPG which is dominated by fossil fuel-fired power plants, the project contributes to annual GHG reductions estimated at 427,936 t CO_{2e}.

The main equipments of the project are 133 sets of WTGs manufactured by Dongfang Steam Turbine Co., Ltd.

Relevant dates for the project are as follows:

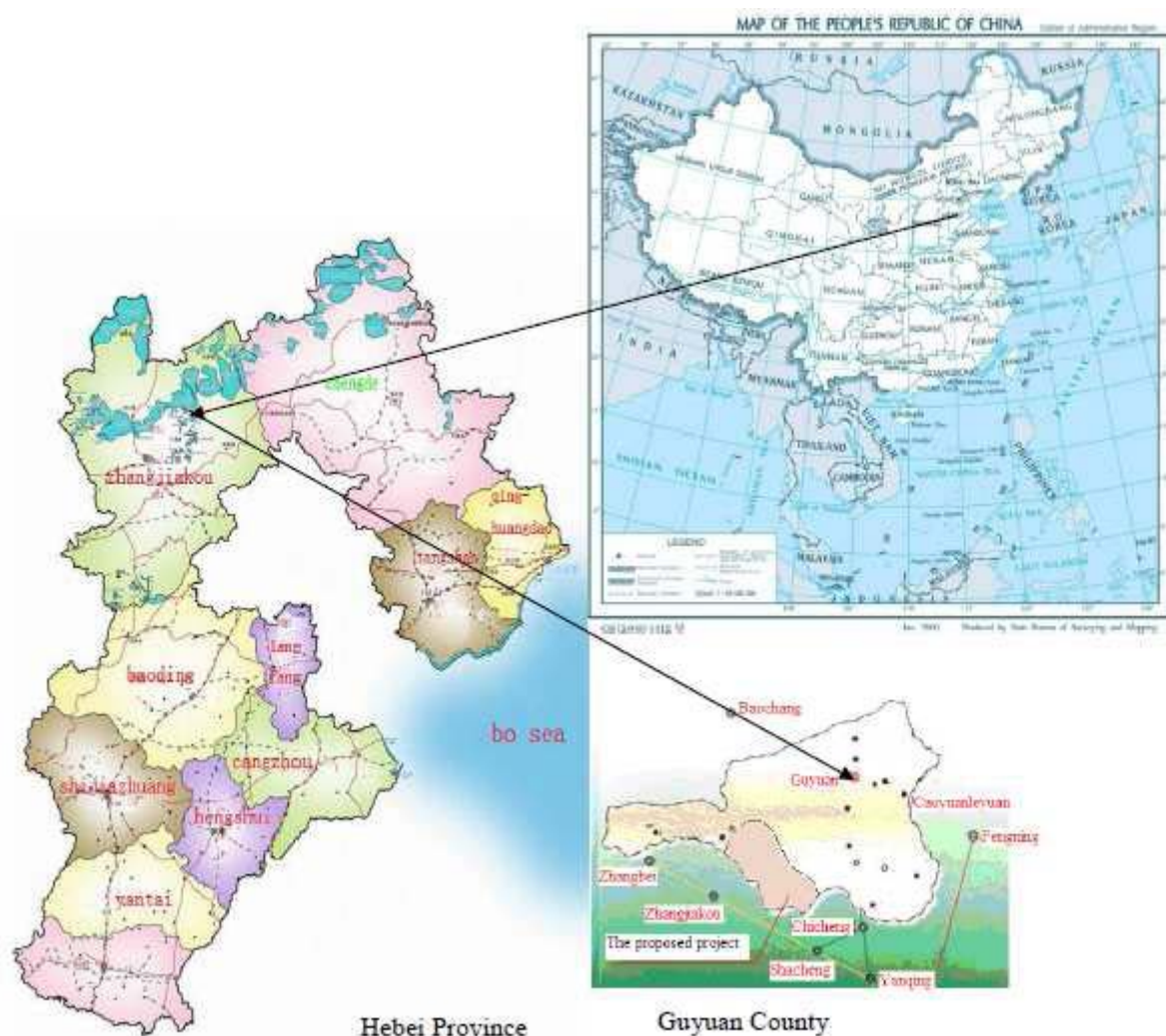
- The date to start construction: 25/08/2008
- The date of first wind turbine started operation : 25/05/2010
- The date of all 133 WTGs started full operation: 06/10/2010
- CDM registration date: 15/09/2011
- CDM crediting period(Renewable) : 15/09/2011 - 14/09/2018

The 4th monitoring period of the project is from 01/01/2013-30/09/2015. The total GHG emission reductions of the project achieved in this monitoring period are 960,887tCO_{2e}, the detailed calculation of emission reductions of the project is provided in the section E.

A.2. Location of project activity

The project is located in southern area of Guyuan County, Zhangjiakou City, Hebei Province, P.R.China. The GPS coordinates of the geographical area the project covered are 115.2997° E ~ 115.7508°E, 41.3169°N ~ 41.5661°N. The location of the project is shown in Figure A.1:

Figure A.1: The location of the project



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)	Hebei Construction Investment New Energy Co., Ltd.	No.
Sweden	Vattenfall Energy Trading Netherlands N.V.	No.

A.4. Reference of applied methodology and standardized baseline

The project applies the approved consolidated baseline and monitoring methodology ACM0002 "Consolidated baseline methodology for grid-connected electricity generation from renewable sources" (Version 12.1.0).

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

- Tool to calculate the emission factor for an electricity system (Version 02);
- Tool for the demonstration and assessment of additionality (Version 05.2);

For more information regarding the methodology and the tools as well as their consideration by the Executive Board, please refer

to <http://cdm.unfccc.int/methodologies/PAmethodologies/approved.html>

A.5. Crediting period of project activity

A 7yrs×3 renewable crediting period has been chosen by the project. The first crediting period is from 15/09/2011 to 14/09/2018. The start date of the crediting period has been requested to change from 01/12/2011 to 15/09/2011 and the request has been accepted by the Board.

A.6. Contact information of responsible persons/entities

Name of person completing this monitoring report:

CECEP Huajing Carbon Assets Management Co., Ltd.

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CECEP Huajing Carbon Assets Management Co., Ltd. is not project participant.

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

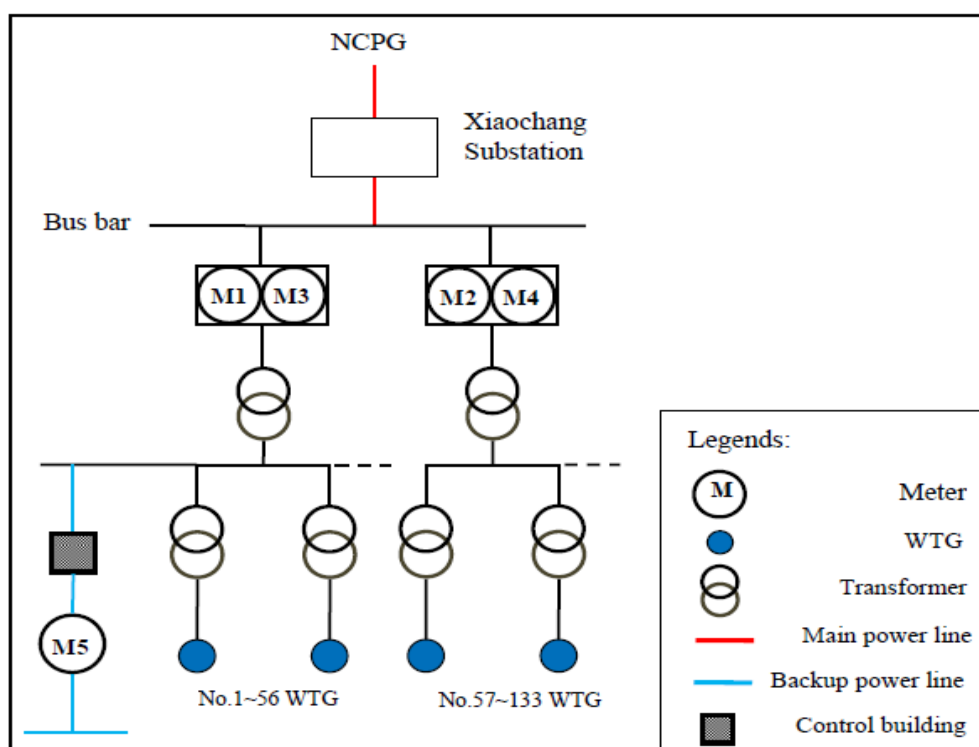
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The installed technology, technical processes and equipments

The project installed 133 sets of wind turbines with a unit capacity of 1,500 kW and total capacity of 199.5MW. Electricity generated by the Project is delivered to NCPG via a 220 kV transmission line.

The wind power generation process of the project is showed in Figure B.1.1.

Figure B.1.1 Process flow chart



The technical parameters of the installed wind turbines are shown in the table below.

Table B.1.1. Technical parameters of wind turbine

Parameter	Unit	Value
Type of turbine	-	FD77B

Type of generator	-	Double-fed asynchronous motor
Nominal output	kW	1500
Rotor diameter	m	77
Hub height	m	61.5
Rated voltage	V	690
Cut-in wind speed	m/s	3
Nominal wind speed	m/s	12

The implementation and actual operation of the project activity

The start date of the project has been identified on 17 Aug 2008 by signing the equipment purchase contract. The project continuously started construction on 25 Aug 2008. The first wind turbine of the project started operation on 25 May 2010 and started full operation on 6 Oct 2010.

Events or situations that occurred during the monitoring period that may impact the applicability of the methodology

No other events or rule/policy changes have taken place that could have affected the applicability of the methodology during this monitoring period.

In addition, there are no changes to the registered project activity during this monitoring period.

B.2. Post-registration changes

B.2.1. Temporary deviations from registered monitoring plan, applied methodology or applied standardized baseline

There are no any temporary deviations from registered monitoring plan, applied methodology have been applied during this monitoring period.

B.2.2. Corrections

There are no any corrections to project information or parameters fixed at validation during this monitoring period.

B.2.3. Changes to start date of crediting period

There were changes to start date of crediting period of the project from 01 Dec 11 to 15 Sep. The request has been accepted by the Board.

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

Not applicable. The registered PDD included a monitoring plan at registration.

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

There were permanent changes prior to the submission of this monitoring report, the revised PDD was approved on 06 Nov 12 and the reference number is PRC-4853-001.

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

There are no any changes to project design of the project during this monitoring period.

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

Not applicable.

SECTION C. Description of monitoring system

The project owner, Hebei Construction Investment New Energy Co., Ltd., is the user of this monitoring plan and is responsible for this monitoring plan. The project owner must maintain credible, transparent, and adequate data estimation, measurement, collection, and tracking systems to maintain the information required for an audit of an emission reduction project.

These records and monitoring systems are needed to allow the DOE to verify project performance as part of the verification and certification process.

Emission reductions will be achieved through displacing part of the electricity from the NCPG due to the power generated by the proposed project. The net grid-connected output is therefore defined as the key data to monitor.

The monitoring plan is established according to the request of approved baseline and monitoring methodology ACM0002 (Version 12.1.0).

1. Monitoring Data management system

The net electricity ($EG_{\text{facility},y}$) supplied to the grid by the project will not be measured directly. It is the difference of the following parameters.

- 1) $EG_{\text{export},y}$ is the electricity exported to the grid by the project through the main power line;
- 2) $EG_{\text{import},y}$ is the electricity imported from the grid by the project through the main power line;
- 3) $EG_{\text{backupline},y}$ is the electricity delivered to the project through the backup line.

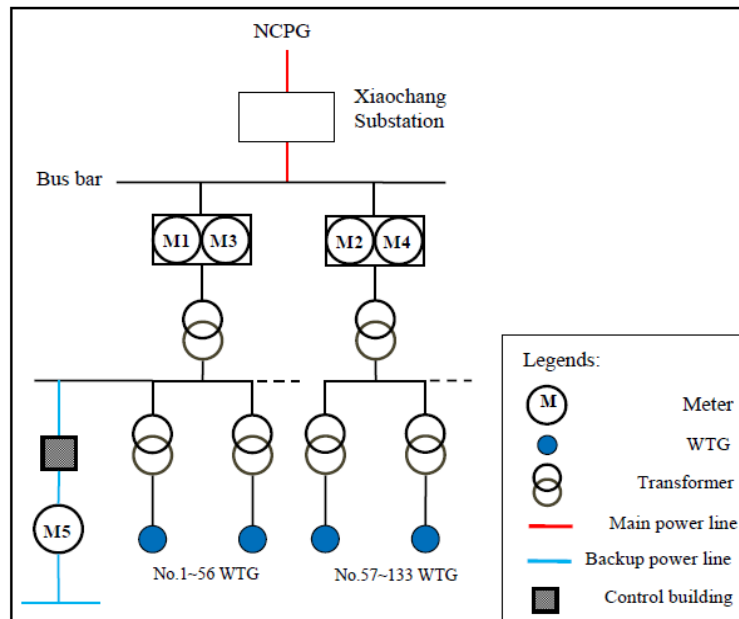
2. Project Integrate Management

This monitoring plan has been implemented by Hebei Construction Investment New Energy Co., Ltd., the project owner. The project manager is responsible for the implementation and monitoring of the monitoring activity. There are two departments organized for data report, quality control. There is a manager responsible for data report and quality control department. The manager will take charge of the employment administration, as well as the operation implementation and monitoring; staffs will carry on the concrete assignment based on the guide of their manager.

3. Metering System

The electricity generated by the project will be transmitted to on-site transformers which increase the voltage to 220 kV, and then delivered to Xiaochang Substation by 220kV transmission line. The simplified electrical grid connection diagram is shown in the following figure C.1:

Figure C.1. Simplified electrical grid connection diagram



The power line supplying electric power to the grid can also deliver power from the grid to the wind farm.

The metering equipment runs in two directions and will record two readings, i.e. electricity exported to the grid ($EG_{\text{export},y}$) and electricity imported from the grid ($EG_{\text{import},y}$). Net electricity supplied to the grid is calculated as exports minus imports.

M1 is installed at high voltage side of No. 1 main transformer; M2 is installed at the high voltage side of No. 2 main transformer. Both M1 and M2 are bi-directional meters. M1 is used for measurement of electricity exported by Group 1 WTGs ($EG_{\text{export},y,1}$) and electricity imported from the grid by Group 1 WTGs ($EG_{\text{import},y,1}$). M2 plays the same role as M1, that is, measuring electricity exported by Group 2 WTGs ($EG_{\text{export},y,2}$) and electricity imported from the grid by Group 2 WTGs ($EG_{\text{import},y,2}$). $EG_{\text{export},y,1}$ plus $EG_{\text{export},y,2}$ makes total electricity exported to the grid by the project ($EG_{\text{export},y}$). Similarly, $EG_{\text{import},y,1}$ plus $EG_{\text{import},y,2}$ make total electricity imported from the grid by the project ($EG_{\text{import},y}$). The meter M3 which is of the same type, accuracy and function and serves as the backup meter of M1, can also record electricity of Group 1 WTGs bidirectionally and works with M1 simultaneously; the meter M4 also acts as backup meter of M2 and measures electricity of Group 2 WTGs together with M2 simultaneously.

In case of emergencies and when the wind farm does not produce enough power for auxiliary power use, the project will use the power through the backup line. Power delivered to the project through a backup power line ($EG_{\text{backupline},y}$) is metered by instruments at M5 in Figure 4 which is operated by the grid company.

Net electricity supplied to the grid by the proposed project is calculated on a monthly basis as:

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

Where:

$EG_{\text{facility},y}$ is the calculated power generation from the proposed project;

$EG_{\text{export},y}$ is the electricity exported to the grid through the main power line metered by the instruments at M1 and M2 (or backup meter M3 and M4);

$EG_{\text{import},y}$ is the electricity imported from the grid through the main power line metered by the instruments at M1 and M2 (or backup meter M3 and M4);

$EG_{\text{backupline},y}$ is the electricity delivered to the project through the backup line metered by the instruments at M5.

4. Quality Assurance and Quality Control

The metering equipments will be properly calibrated and checked annually by an independent third

party according to relevant national standard, e.g. the DL/T448 – 2000 or other national standard, to ensure its accuracy. The accuracy of meter M1, M2, M3 and M4 which have been installed are 0.2s. The accuracy of meter M5 is 0.5s.

The relative recording files will be supplied to the project owner. These recording files will be preserved by the project owner and provide to DOE in Verification.

The relevant training will be implemented by the project owner and the equipment manufacturer before operation of the proposed project.

5. Information collection and management

It is the responsibility for the project owner to provide necessary information and data for validation and verification. The measurement of the whole production data is controlled and stored by the project owner.

All physical documents including the readings in electronic and manual form of the Meters, billing receipts will be stored by the project owner and kept one copy in order to facilitate the verification of DOE.

The monthly records of power supplied to the grid and received from the grid, relevant accounting documents and billing receipts and the results of calibration shall be collected in a central place by the project owner. All data collected as part of monitoring will be kept at least for 2 years after the end of the last crediting period by the project owner.

6. Procedure in case of damaged metering equipment

In case metering equipment is damaged and no reliable readings can be recorded the project owner will estimate net supply by the proposed project activity according to the following procedure:

a. In case the main meter is damaged only:

By reading the backup meter

b. In case both the main meter and the backup one are damaged:

The project owner and the grid company will jointly calculate a conservative estimate of power supplied to the grid. A statement will be prepared indicating

- The background to the damage to metering equipment;
- The assumptions used to estimate net supply to the grid for the days for which no record could be recorded the estimation of power supplied to the grid.

7. Monitoring Report

The Project owner will annually prepare a monitoring report which will include among others metering values of power supplied to and received from the grid, copies of electricity receipts, a report on calibration and calculation of emission reductions.

All the data shall be kept until two years after the end of the first crediting period.

SECTION D. Data and parameters

D.1. Data and parameters fixed ex ante or at renewal of crediting period

Data/parameter:	EF _{grid,CM,y}
Unit	tCO ₂ e/MWh
Description	The baseline emission factor
Source of data	Ex-ante calculation in the registered PDD
Value(s) applied)	1.05485
Choice of data or measurement methods and procedures	Notification on Determining Baseline Emission Factor of China Grid ²
Purpose of data	Calculation of baseline emissions ex-ante
Additional comments	N/A

D.2. Data and parameters monitored

Data/parameter:	EG _{facility,y}
Unit	MWh
Description	Quantity of net electricity generation supplied by the project plant to the grid in year y
Measured/calculated/default	Calculated
Source of data	Calculation
Value(s) of monitored parameter	103,442
Monitoring equipment	N/A
Measuring/reading/recording frequency:	-
Calculation method (if applicable):	Calculated by $EG_{\text{export},y} - EG_{\text{import},y} - EG_{\text{backupline},y}$ and cross-check with sale receipts.
QA/QC procedures:	Net electricity supplied to the grid by the project activity will be crosschecked with electricity sales receipts.
Purpose of data:	Calculation of baseline emissions
Additional comments:	N/A

Data/parameter:	EG _{export,y}
Unit	MWh
Description	The electricity delivered by the Project to the grid in year y
Measured/calculated/default	Measured
Source of data	Measured by M1 (M3) and M2 (4) located at the output of the on-site 220kV transformer substation
Value(s) of monitored parameter	103,501
Monitoring equipment	M1(M3) and M2(M4)
Measuring/reading/recording frequency:	Continuously measurement and monthly recording

² <http://cdm.ccchina.gov.cn/WebSite/CDM/UpFile/2008/20081231101111351.pdf>

Calculation method (if applicable):	$EG_{\text{export},y} = EG_{\text{export},y,1} + EG_{\text{export},y,2}$ Here, $EG_{\text{export},y}$ refers to annual electricity exported to the grid and equals to sum of $EG_{\text{export},y,1}$ and $EG_{\text{export},y,2}$. $EG_{\text{export},y,1}$ and $EG_{\text{export},y,2}$ refer to annual electricity exported to the grid by the two groups of wind turbine generators respectively. All data collected as part of monitoring should be archived electronically and be kept at least for 2 years after the end of the last crediting period.
QA/QC procedures:	The metering equipments at the substation will be calibrated at least once a year according to national standard.
Purpose of data:	Calculation of baseline emissions
Additional comments:	N/A

Data/parameter:	$EG_{\text{import},y}$
Unit	MWh
Description	Annual electricity imported from the grid to the proposed project.
Measured/calculated/default	Measured
Source of data	Measured by M1(M3) and M2 (M4) located at the output of the on-site 220kV transformer substation
Value(s) of monitored parameter	59
Monitoring equipment	M1(M3) and M2(M4)
Measuring/reading/recording frequency:	Continuously measurement and monthly recording
Calculation method (if applicable):	$EG_{\text{import},y} = EG_{\text{import},y,1} + EG_{\text{import},y,2}$ Here, $EG_{\text{import},y}$ refers to annual electricity imported from the grid and equals to sum of $EG_{\text{import},y,1}$ and $EG_{\text{import},y,2}$. $EG_{\text{import},y,1}$ and $EG_{\text{import},y,2}$ refer to annual electricity imported from the grid by the two groups of wind turbine generators respectively. All data collected as part of monitoring should be archived electronically and be kept at least for 2 years after the end of the last crediting period.
QA/QC procedures:	The metering equipments at the substation will be calibrated at least once a year according to national standard.
Purpose of data:	Calculation of baseline emissions
Additional comments:	N/A

Data/parameter:	$EG_{\text{backuptline},y}$
Unit	MWh
Description	The electricity imported by the Project from the grid via the 10kV line in year y
Measured/calculated/default	Measured
Source of data	Measured by M5 located at the 10kV line
Value(s) of monitored parameter	0
Monitoring equipment	M5
Measuring/reading/recording frequency:	Continuously measurement and monthly recording
Calculation method (if applicable):	N/A
QA/QC procedures:	Calibration has been conducted to guarantee the accuracy and normal functions of M5, according to relevant national or industrial standards by qualified institution;
Purpose of data:	Calculation of baseline emissions
Additional comments:	N/A

D.3. Implementation of sampling plan

Not applicable.

SECTION E. Calculation of emission reductions or GHG removals by sinks**E.1. Calculation of baseline emissions or baseline net GHG removals by sinks**

The baseline emissions are calculated according to the ACM0002 (version 12) and the registered PDD as below:

$$BE_y = EG_{facility,y} \times EF_{grid,CM,y} \quad (1)$$

Where,

BE_y : Baseline emissions in year y (tCO₂e);

$EG_{facility,y}$: Quantity of net electricity generation supplied by the project plant/unit to the grid in year y ;

$EF_{grid,CM,y}$: the combined margin CO₂ emission factor for grid connected power generation in year y calculated using *Tool to calculate the emission factor for an electricity system* (tCO₂e/MWh).

Calculation of $EG_{facility,y}$

The Project is the installation of a new grid-connected renewable power plant at a site where no renewable power plant was operated prior to the implementation of the Project, so:

$$EG_{facility,y} = EG_{export,y} - EG_{import,y} - EG_{backupline,y} \quad (2)$$

Where:

$EG_{facility,y}$ is the quantity of net electricity generation supplied by the Project to the grid in year y (MWh);

$EG_{export,y}$ is the electricity delivered by the Project to the grid via the main transmission line in year y (MWh);

$EG_{import,y}$ is the electricity imported by the Project from the grid in year y (MWh);

$EG_{backupline,y}$ is the electricity imported by the Project from the grid via 10kV line in year y (MWh).

The quantity of electricity delivered by the Project to NCPG via the main transmission line during this monitoring period is shown in Table E.1.1. During this monitoring period, the total quantity of electricity delivered by the project to NCPG via the main transmission line is 912,857MWh.

Table E.1.1. Amount of electricity delivered by the Project to NCPG via the main transmission line (Unit: MWh)

Period	Electricity from meter readings	Electricity from receipts	Conservative value between A & B for ER calculation
	A	B	C=min(A,B)
01/01/2013-31/01/2013	39,803.800	38,570.587	38,570.587
01/02/2013-28/02/2013	30,352.400	32,226.744	30,352.400
01/03/2013-31/03/2013	34,444.100	34,332.683	34,332.683
01/04/2013-30/04/2013	41,947.000	42,124.346	41,947.000
01/05/2013-31/05/2013	30,465.900	30,332.720	30,332.720
01/06/2013-30/06/2013	26,964.500	26,963.354	26,963.354
01/07/2013-31/07/2013	24,388.600	24,213.838	24,213.838
01/08/2013-31/08/2013	25,042.200	26,167.614	25,042.200
01/09/2013-30/09/2013	26,831.600	25,872.638	25,872.638
01/10/2013-31/10/2013	28,724.400	29,766.869	28,724.400
01/11/2013-30/11/2013	38,989.200	38,200.855	38,200.855
01/12/2013-31/12/2013	36,978.500	36,575.836	36,575.836
01/01/2014-31/01/2014	36,975.600	37,979.524	36,975.600
01/02/2014-28/02/2014	17,556.000	16,745.421	16,745.421

01/03/2014-31/03/2014	31,271.800	31,916.137	31,271.800
01/04/2014-30/04/2014	23,772.400	24,240.931	23,772.400
01/05/2014-31/05/2014	34,825.400	34,158.740	34,158.740
01/06/2014-30/06/2014	15,478.300	15,835.171	15,478.300
01/07/2014-31/07/2014	19,193.500	19,150.186	19,150.186
01/08/2014-31/08/2014	16,893.600	17,369.572	16,893.600
01/09/2014-30/09/2014	19,617.900	18,593.256	18,593.256
01/10/2014-31/10/2014	27,371.600	26,928.528	26,928.528
01/11/2014-30/11/2014	32,430.200	37,428.644	32,430.200
01/12/2014-31/12/2014	47,689.200	52,469.483	47,689.200
01/01/2015-31/01/2015	36,231.900	37,587.011	36,231.900
01/02/2015-28/02/2015	23,206.600	22,076.979	22,076.979
01/03/2015-31/03/2015	39,068.800	12,613.327	12,613.327
01/04/2015-30/04/2015	32,686.800	32,254.881	32,254.881
01/05/2015-31/05/2015	29,727.700	28,682.119	28,682.119
01/06/2015-30/06/2015	28,808.200	29,750.017	28,808.200
01/07/2015-31/07/2015	25,088.400	24,751.330	24,751.330
01/08/2015-31/08/2015	16,523.900	17,779.677	16,523.900
01/09/2015-30/09/2015	10,818.500	9,698.749	9,698.749
Total			912,857

The quantity of electricity imported by the Project from NCPG during this monitoring period is shown in Table E.1.2. During this monitoring period, the total quantity of electricity imported by the Project from NCPG is 1,934MWh. The ex ante baseline emission factor is 1.05485tCO₂e/MWh.

Table E.1.2. Amount of electricity imported by the Project from NCPG via main transmission line (Unit: MWh)

Period	Electricity from meter readings	Electricity from receipts	Conservative value between A & B for ER calculation
	D	E	F=max(D,E)
01/01/2013-31/01/2013	3.300	5.500	5.500
01/02/2013-28/02/2013	36.900	24.475	36.900
01/03/2013-31/03/2013	30.300	20.900	30.300
01/04/2013-30/04/2013	15.100	17.325	17.325
01/05/2013-31/05/2013	13.600	21.450	21.450
01/06/2013-30/06/2013	3.300	7.700	7.700
01/07/2013-31/07/2013	20.300	46.200	46.200
01/08/2013-31/08/2013	9.900	18.495	18.495
01/09/2013-30/09/2013	28.800	58.300	58.300
01/10/2013-31/10/2013	25.900	42.350	42.350
01/11/2013-30/11/2013	0.500	0.825	0.825
01/12/2013-31/12/2013	4.600	15.050	15.050
01/01/2014-31/01/2014	0.000	0.000	0.000
01/02/2014-28/02/2014	48.600	95.975	95.975
01/03/2014-31/03/2014	19.500	36.025	36.025
01/04/2014-30/04/2014	25.200	57.750	57.750
01/05/2014-31/05/2014	5.100	6.875	6.875
01/06/2014-30/06/2014	25.600	49.225	49.225
01/07/2014-31/07/2014	22.100	48.675	48.675
01/08/2014-31/08/2014	32.700	72.325	72.325
01/09/2014-30/09/2014	46.100	98.175	98.175
01/10/2014-31/10/2014	24.900	39.050	39.050
01/11/2014-30/11/2014	82.000	94.600	94.600
01/12/2014-31/12/2014	27.600	32.725	32.725
01/01/2015-31/01/2015	74.200	108.350	108.350

01/02/2015-28/02/2015	168.500	256.300	256.300
01/03/2015-31/03/2015	87.300	82.225	87.300
01/04/2015-30/04/2015	29.600	55.000	55.000
01/05/2015-31/05/2015	124.500	137.500	137.500
01/06/2015-30/06/2015	100.100	110.000	110.000
01/07/2015-31/07/2015	23.000	82.500	82.500
01/08/2015-31/08/2015	38.300	110.000	110.000
01/09/2015-30/09/2015	25.500	55.000	55.000
Total			1,934

The quantity of electricity imported by the Project via the 10kV line during this monitoring period is shown in Table E.1.3. During this monitoring period, no electricity was imported from the grid by the project via the 10kV line, therefore, the total quantity of electricity imported from the grid by the Project via the 10kV line is 0MWh.

Table E.1.3. Amount of electricity imported by the Project from the grid via the 10kV line (Unit: MWh)

Period	Electricity from main meter readings	Electricity from receipts	Conservative value between A & B for ER calculation
	G	H	I=max(G,H)
01/01/2013-31/01/2013	0.000	0.000	0.000
01/02/2013-28/02/2013	0.000	0.000	0.000
01/03/2013-31/03/2013	0.000	0.000	0.000
01/04/2013-30/04/2013	0.000	0.000	0.000
01/05/2013-31/05/2013	0.000	0.000	0.000
01/06/2013-30/06/2013	0.000	0.000	0.000
01/07/2013-31/07/2013	0.000	0.000	0.000
01/08/2013-31/08/2013	0.000	0.000	0.000
01/09/2013-30/09/2013	0.000	0.000	0.000
01/10/2013-31/10/2013	0.000	0.000	0.000
01/11/2013-30/11/2013	0.000	0.000	0.000
01/12/2013-31/12/2013	0.000	0.000	0.000
01/01/2014-31/01/2014	0.000	0.000	0.000
01/02/2014-28/02/2014	0.000	0.000	0.000
01/03/2014-31/03/2014	0.000	0.000	0.000
01/04/2014-30/04/2014	0.000	0.000	0.000
01/05/2014-31/05/2014	0.000	0.000	0.000
01/06/2014-30/06/2014	0.000	0.000	0.000
01/07/2014-31/07/2014	0.000	0.000	0.000
01/08/2014-31/08/2014	0.000	0.000	0.000
01/09/2014-30/09/2014	0.000	0.000	0.000
01/10/2014-31/10/2014	0.000	0.000	0.000
01/11/2014-30/11/2014	0.000	0.000	0.000
01/12/2014-31/12/2014	0.000	0.000	0.000
01/01/2015-31/01/2015	0.000	0.000	0.000
01/02/2015-28/02/2015	0.000	0.000	0.000
01/03/2015-31/03/2015	0.000	0.000	0.000
01/04/2015-30/04/2015	0.000	0.000	0.000
01/05/2015-31/05/2015	0.000	0.000	0.000
01/06/2015-30/06/2015	0.000	0.000	0.000
01/07/2015-31/07/2015	0.000	0.000	0.000
01/08/2015-31/08/2015	0.000	0.000	0.000
01/09/2015-30/09/2015	0.000	0.000	0.000
Total			0

Based on Table E1.1, Table E1.2, Table E1.3, the total amount of the net electricity delivered by

the Project to NCPG in this monitoring period is 910,923(=912,857-1,934-0) MWh. The ex ante baseline emission factor is 1.05485tCO₂e/MWh.

Table E.1.4. Amount of net electricity delivered by the project to NCPG (Unit: MWh)

Period	Electricity delivered by the project to the grid	Electricity imported by the project from the grid	Electricity imported by the project from 10kV backup line	Amount of net electricity delivered by the project to the grid
01/01/2013-31/01/2013	38,570.587	5.500	0.000	38,565.087
01/02/2013-28/02/2013	30,352.400	36.900	0.000	30,315.500
01/03/2013-31/03/2013	34,332.683	30.300	0.000	34,302.383
01/04/2013-30/04/2013	41,947.000	17.325	0.000	41,929.675
01/05/2013-31/05/2013	30,332.720	21.450	0.000	30,311.270
01/06/2013-30/06/2013	26,963.354	7.700	0.000	26,955.654
01/07/2013-31/07/2013	24,213.838	46.200	0.000	24,167.638
01/08/2013-31/08/2013	25,042.200	18.495	0.000	25,023.705
01/09/2013-30/09/2013	25,872.638	58.300	0.000	25,814.338
01/10/2013-31/10/2013	28,724.400	42.350	0.000	28,682.050
01/11/2013-30/11/2013	38,200.855	0.825	0.000	38,200.030
01/12/2013-31/12/2013	36,575.836	15.050	0.000	36,560.786
01/01/2014-31/01/2014	36,975.600	0.000	0.000	36,975.600
01/02/2014-28/02/2014	16,745.421	95.975	0.000	16,649.446
01/03/2014-31/03/2014	31,271.800	36.025	0.000	31,235.775
01/04/2014-30/04/2014	23,772.400	57.750	0.000	23,714.650
01/05/2014-31/05/2014	34,158.740	6.875	0.000	34,151.865
01/06/2014-30/06/2014	15,478.300	49.225	0.000	15,429.075
01/07/2014-31/07/2014	19,150.186	48.675	0.000	19,101.511
01/08/2014-31/08/2014	16,893.600	72.325	0.000	16,821.275
01/09/2014-30/09/2014	18,593.256	98.175	0.000	18,495.081
01/10/2014-31/10/2014	26,928.528	39.050	0.000	26,889.478
01/11/2014-30/11/2014	32,430.200	94.600	0.000	32,335.600
01/12/2014-31/12/2014	47,689.200	32.725	0.000	47,656.475
01/01/2015-31/01/2015	36,231.900	108.350	0.000	36,123.550
01/02/2015-28/02/2015	22,076.979	256.300	0.000	21,820.679
01/03/2015-31/03/2015	12,613.327	87.300	0.000	12,526.027
01/04/2015-30/04/2015	32,254.881	55.000	0.000	32,199.881
01/05/2015-31/05/2015	28,682.119	137.500	0.000	28,544.619
01/06/2015-30/06/2015	28,808.200	110.000	0.000	28,698.200
01/07/2015-31/07/2015	24,751.330	82.500	0.000	24,668.830
01/08/2015-31/08/2015	16,523.900	110.000	0.000	16,413.900
01/09/2015-30/09/2015	9,698.749	55.000	0.000	9,643.749
Total				910,923

The baseline emissions are calculated according to formula (1):

$$BE_y = EG_{facility,y} \times EF_{grid,CM,y} = 910,923 \text{ MWh} \times 1.05485 \text{ tCO}_2\text{e /MWh} = 960,887 \text{ tCO}_2\text{e}$$

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

According to ACM0002 (Version 12), the Project is a wind power project and project emissions are not considered.

E.3. Calculation of leakage

According to ACM0002 (Version 12), no leakage effects need to be accounted.

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 ₂ e)	Project emissions or actual net GHG removals by sinks (t CO ₂ e)	Leakage (t CO ₂ e)	GHG emission reductions or net GHG removals by sinks (t CO ₂ e) achieved in the monitoring period		
				Up to 31/12/2012	From 01/01/2013	Total amount
Total	960,887	0	0	0	960,887	960,887

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 ₂ e)	1,175,944 ³	960,887

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

The amount of emission reductions achieved in this monitoring period is 18.288% lower than the estimated value for the same period in the approved revised PDD version 07, which is due to the fluctuation of wind speed.

³ The annual emission reductions in the registered PDD version7 is 427,936tCO₂e, therefore, the estimated total emission reductions for this monitoring period in the registered PDD for this monitoring period (2 years and 273 days) is 1,175,944 tCO₂e (i.e. 427,936/365*(365*2+273)).

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

Project participant and/or responsible person/ entity	<input checked="" type="checkbox"/> Project participant <input type="checkbox"/> Responsible person/ entity for completing the CDM-MR-FORM
Organization name	Hebei Construction Investment New Energy Co., Ltd.
Street/P.O. Box	No.9 Yuhua Western Road
Building	Room 501, Building B, Yuyuan Plaza
City	Shijiazhuang
State/region	Hebei province
Postcode	050000
Country	People's Republic of China
Telephone	86- 311-85278915
Fax	86-311-85278008
E-mail	cdmhecic@gmail.com
Website	
Contact person	Bo Zhang
Title	-
Salutation	Ms.
Last name	Zhang
Middle name	
First name	Bo
Department	-
Mobile	86-15803211020
Direct fax	86-311-85278008
Direct tel.	86- 311-85278915
Personal e-mail	Zhangbo9339@126.com

Project participant and/or responsible person/ entity	<input checked="" type="checkbox"/> Project participant <input type="checkbox"/> Responsible person/ entity for completing the CDM-MR-FORM
Organization name	Vattenfall Energy Trading Netherlands N.V.
Street/P.O. Box	Hoekenrode 8
Building	
City	Amsterdam
State/Region	Amsterdam
Postcode	1102 BR
Country	The Netherlands
Telephone	+31 6 55872128
Fax	+31 6 55872128
E-mail	cdmteam@vattenfall.com
Website	
Contact person	Francisco Grajales
Title	
Salutation	Mr.
Last name	Francisco

Middle name	
First name	Grajales
Department	
Mobile	+31 6 55872128
Direct fax	
Direct tel.	+31 6 55872128
Personal e-mail	cdmteam@vattenfall.com

Project participant and/or responsible person/ entity	<input type="checkbox"/> Project participant <input checked="" type="checkbox"/> Responsible person/ entity for completing the CDM-MR-FORM
Organization name	CECEP Huajing Carbon Assets Management Co., Ltd
Street/P.O. Box	No. 42 Xizhimen Beidajie, Haidian District
Building	11th Floor, Block A, CECEP Mansion
City	Beijing
State/Region	Beijing
Postcode	100082
Country	P.R.China
Telephone	86-10-65903379
Fax	
E-mail	lizhenlan@cecep.cn
Website	www.cecep.cn
Contact person	
Title	Senior Project Manager
Salutation	Ms.
Last name	Li
Middle name	
First name	Zhenlan
Department	
Mobile	86-15011019192
Direct fax	
Direct tel.	86-10-65903379 ext 601
Personal e-mail	lizhenlan@cecep.cn

Appendix 2. The calibration information for all the meters

Metering equipment	Serial No.	Accuracy class	Calibration frequency
Electricity meter M1	37006390	0.2S	1 year
Electricity meter M2	37002994	0.2S	1 year
Electricity meter M3	09080144840023	0.2S	1 year
Electricity meter M4	09080144840005	0.2S	1 year
Electricity meter M5	B24T0P812403001807	0.5S	1 year