

HEBEI CHENGDE WEICHANG YUDAOKOU PASTURE 150MW WIND FARM PROJECT



Document Prepared By Hebei Construction Investment New Energy Co., Ltd.

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1 PROJECT DETAILS

1.1 Summary Description of Project

Hebei Chengde Weichang Yudaokou Pasture 150MW Wind Farm Project (hereinafter referred to as “the project”) is a new grid-connected renewable power generation project, which is located in Weichang Manchu & Mongolia Autonomous County, Chengde City, Hebei province, China. The project is constructed and operated by Hebei Construction Investment New Energy Co., Ltd.

The project involves in installation and operation of 100 sets of SL1500/77 wind turbines with a unit capacity of 1.5MW. The total installed capacity of the project is 150MW, and the power generated by the project is transmitted to the North China Power Grid (hereinafter referred to as “NCPG”).

The project transmits renewable wind power to the NCPG, and substitutes for relevant power generation by fossil fuel power plants of the NCPG (main emission: CO₂), reducing the Greenhouse Gas emission amount to 329,852tCO₂e annually at full-load operating.

It began to construct on 11th May 2009 and was put into commercial operation on 27th Nov. 2010(i.e. the project start date). This VCS monitoring period covered the time from 27th Nov. 2010 to 16th Jan. 2011, during which GHG ERs amount to 64,507 tCO₂e were achieved.

1.2 Sectoral Scope and Project Type

The project is a new grid-connected renewable wind power plant and not a grouped project as per definition of Grouped Project.

1.3 Project Proponent

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1.4 Other Entities Involved in the Project

N/A

1.5 Project Start Date

27-Nov.-2010¹

¹ The date is obtained from Grid Debugging Record.

1.6 Project Crediting Period

The VCS crediting period is from 27-Nov.-2010 to 16-Jan.-2011.

1.7 Project Location

The project is located within Weichang Manchu & Mongolia Autonomous County, Chengde City, Hebei Province, P.R.China. The central geographical coordinates of the project is longitude 116°57'05"E and latitude 42°11'21"N.

1.8 Title and Reference of Methodology

Approved consolidated baseline and monitoring methodology ACM0002 (Version 10):
Consolidated methodology for grid-connected electricity generation from renewable sources.

2 IMPLEMENTATION STATUS

2.1 Implementation Status of the Project Activity

The project was implemented in consistency with the registered CDM-PDD. The project has been put into commercial operation since 27th Nov. 2010. During this VCS monitoring period, the project was in normal and smooth operation as per the registered PDD without any emergencies or special events, which might impact the applicability of the methodology.

2.2 Deviations from the Monitoring Plan

N/A

2.3 Grouped Project

N/A

3 DATA AND PARAMETERS

3.1 Data and Parameters Available at Validation

Data Unit / Parameter:	EF _{grid,CM,y}
Data unit:	tCO ₂ e/MWh
Description:	Baseline emission factor of the NCPG
Source of data:	Registered CDM PDD
Value applied:	1.05485
Purpose of the data:	Used for calculation of baseline emission
Any comment:	This parameter is ex-ante determined in the registered CDM-PDD and fixed in the first credit period.

3.2 Data and Parameters Monitored

Data Unit / Parameter:	EG _{facility,y}
Data unit:	MWh
Description:	Net power supplied to the grid
Source of data:	Reading record of EG _{s,y} , PR _{g,y} and PR _{10 kV,y}
Description of measurement methods and procedures to be applied:	Net power supplied to the grid (EG _{facility,y}) is calculated monthly with on-site monitored data of EG _{s,y} and PR _{g,y} and PR _{10 kV,y} .
Frequency of monitoring/recording:	Monthly calculated and recorded
Value monitored:	Listed in Table 6 below.
Monitoring equipment:	N/A
QA/QC procedures to be applied:	This data is calculated with cross checked values.
Calculation method:	$EG_{facility,y} = EG_{s,y} - PR_{g,y} - PR_{10\text{ kV},y}$
Any comment:	-

Data Unit / Parameter:	EG _{s,y}		
Data unit:	MWh		
Description:	Power supplied to the grid		
Source of data:	Reading record of EG _{s,y} .		
Description of measurement methods and procedures to be applied:	Measured continuously and recorded on a monthly basis. Please refer section 3.3 below for detail information.		
Frequency of monitoring/recording:	Continuously measured and monthly recorded.		
Value monitored:	Listed in Table 4.		
Monitoring equipment	Electricity meter installed at the output of the on-site 220kV transformer substation		
	Monitoring equipment	M1	M2
	Main/Backup	Main meter	Backup meter
	Type	SL7000	SL7000
	Accuracy class	0.2s	0.2s
	Serial number	36013942	36014056
	Calibration frequency	Annually	Annually
	Date of	14/09/2010	14/09/2010

	calibration		
	Validity	14/09/2010-13/09/2011	14/09/2010-13/09/2011
QA/QC procedures to be applied:	The meter was annually calibrated according to the relevant national electric industry standards and regulations of (DL/T 448-2000); power supplied to the grid was double checked according to sales receipts.		
Calculation method:	N/A		
Any comment:	-		

Data Unit / Parameter:	PR _{g,y}		
Data unit:	MWh		
Description:	The electricity use of power plant supplied by the grid via the 220 kV line		
Source of data:	Reading record of PR _{g,y}		
Description of measurement methods and procedures to be applied:	Measured continuously and recorded on a monthly basis .Please refer section 3.3 below for detail information.		
Frequency of monitoring/recording:	Continuously measured and monthly recorded.		
Value monitored:	Listed in Table 5.		
Monitoring equipment:	Electricity meter installed at the output of the on-site 220kV transformer substation		
	Monitoring equipment	M1	M2
	Main/Backup	Main meter	Backup meter
	Type	SL7000	SL7000
	Accuracy class	0.2s	0.2s
	Serial number	36013942	36014056
	Calibration frequency	Annually	Annually
	Date of calibration	14/09/2010	14/09/2010
	Validity	14/09/2010-13/09/2011	14/09/2010-13/09/2011
QA/QC procedures to be applied:	The meter was annually calibrated according to the relevant national electric industry standards and regulations of (DL/T 448-2000); electricity use of power plant supplied by the grid was double checked according to sales receipts.		

Calculation method:	N/A
Any comment:	-

Data Unit / Parameter:	PR _{10 kV,y}	
Data unit:	MWh	
Description:	The electricity imported by the project from the grid via the 10 kV line	
Source of data:	Reading record of PR _{10 kV,y} .	
Description of measurement methods and procedures to be applied:	Measured continuously and recorded on a monthly basis. Please refer section 3.3 below for detail information.	
Frequency of monitoring/recording:	Continuously measured and monthly recorded.	
Value monitored:	0.000	
Monitoring equipment:	Installed on the 10 kV line	
	Monitoring equipment	M3
	Type	DTS(X) 747
	Accuracy class	1.0
	Serial number	2103348
	Calibration frequency	Annually
	Date of calibration	24/09/2010
	Validity	24/09/2010-23/09/2011
QA/QC procedures to be applied:	The meter was annually calibrated according to the relevant national electric industry standards and regulations of (DL/T 448-2000); electricity use of power plant supplied by the grid was double checked according to sales receipts.	
Calculation method:	N/A	
Any comment:	-	

3.3 Description of the Monitoring Plan

In line with the methodology ACM0002 (Version 10) and the registered CDM-PDD (Version 0.3), it is required to monitor the following parameters:

Parameter	Description
$EG_{s,y}$	Power supplied to the grid
$PR_{g,y}$	The electricity use of power plant supplied by the grid via the 220

	kV line
$EG_{facility,y}$	Net power supplied to the grid
$PR_{10\text{ kV},y}$	The electricity imported by the project from the grid via the 10 kV line

Monitoring point of the project

The monitoring point of the Project is shown in Figure 1.

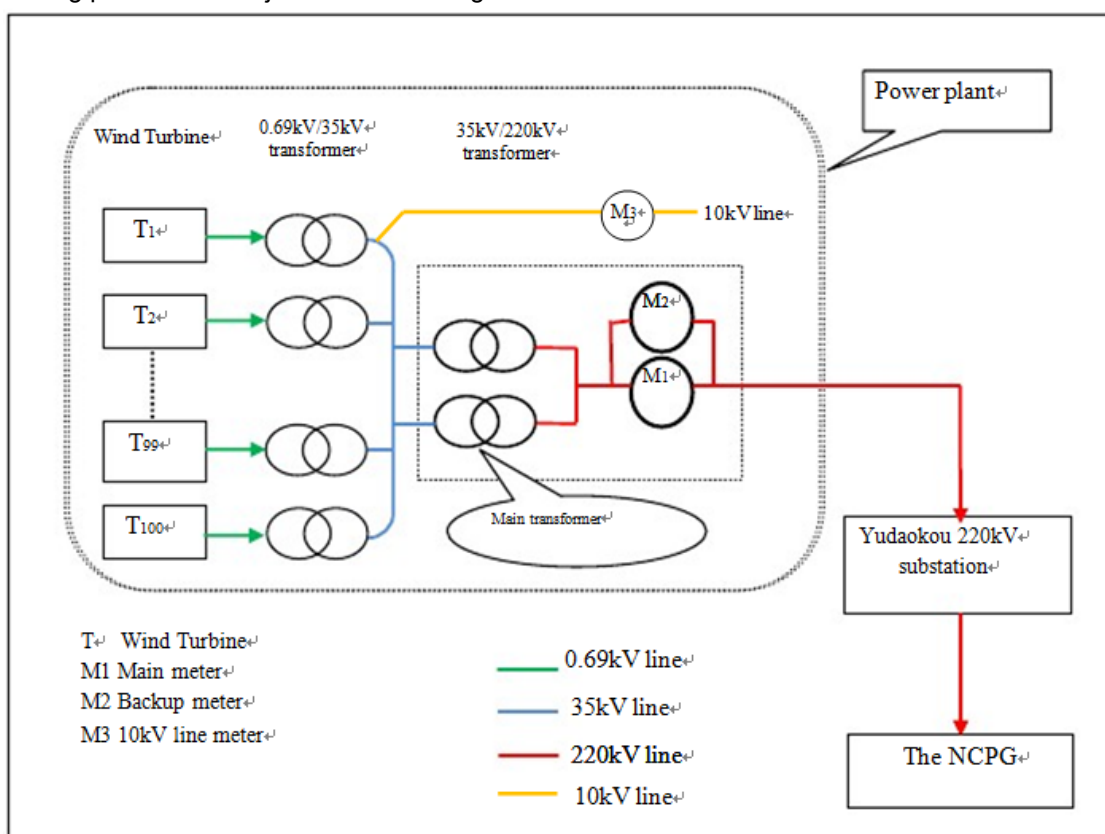


Figure 1. Monitoring point of the Project

Information on the monitoring equipment used in the project is summarized in Table 1.

Table 1. Monitoring equipment used in the Project

Parameter	Monitoring point	Serial number	Accuracy class
$EG_{s,y}$	Electricity meter installed at the output of the on-site 220kV transformer substation	36013942	0.2s
$PR_{g,y}$	Electricity meter installed at the output	36013942	0.2s

	of the on-site 220kV transformer substation		
$EG_{facility,y}$	N/A	N/A	N/A
$PR_{10\text{ kV},y}$	Electricity meter installed on the 10 kV line	2103348	1.0

Data generation, recording and calculation

Power supplied to the grid

Power supplied to the grid ($EG_{s,y}$) was continuously measured by M1 the bi-directional electricity meter located at the output of the on-site 220kV transformer substation.

Readings of the electricity meter were recorded every day in the Daily Reading Records by designated personnel at the wind farm of the Project. Designated personnel of the Project Owner monthly summarized and recorded readings of the electricity meter in Monthly Production Report of the Project to verify the data.

For the power supplied to the grid ($EG_{s,y}$), the sales receipts were monthly issued by the grid company to the Project Owner. Based on the data on the sales receipts, the grid company paid the Project Owner subsequently on a monthly basis. The sales receipts issued by the grid company are used for double check.

The electricity use of power plant supplied by the grid via the 220 kV line

The electricity use of power plant supplied by the grid via the 220 kV line ($PR_{g,y}$) was continuously measured by M1 the bi-directional electricity meter installed at the output of the on-site 220kV transformer substation.

Readings of the electricity meter were recorded every day in the Daily Reading Records by designated personnel at the wind farm of the Project. Designated personnel of the Project Owner monthly summarized and recorded readings of the electricity meter in Monthly Production Report of the Project to verify the data.

For the electricity use of power plant supplied by the grid via the 220 kV line ($PR_{g,y}$), the sales receipts were issued by the grid company to the Project Owner. Based on the data on the sales receipts, the Project Owner paid the grid company. The sales receipts are used for double check.

The electricity imported by the project from the grid via the 10 kV line

The electricity imported by the project from the grid via the 10 kV line ($PR_{10\text{ kV},y}$) was continuously measured by the electricity meter installed on the 10 kV line. Designated personnel of the project owner records readings of the electricity meter monthly. After the grid company confirmed the data, the sales receipts would be issued based on the data by the grid company. And the sales receipts are used for double check for the electricity imported by the project from the grid via the 10 kV line.

Net power supplied to the grid

Net power supplied to the grid ($EG_{\text{facility},y}$) was calculated monthly with on-site monitored data of $EG_{s,y}$, $PR_{g,y}$ and $PR_{10\text{ kV},y}$ using the formula $EG_{\text{facility},y} = EG_{s,y} - PR_{g,y} - PR_{10\text{ kV},y}$

Organizational structure, roles and responsibilities of the personnel

The operation and management structure and the responsibilities of the principals are as follows.

A chief monitoring officer is appointed by the project owner, who is in charge of supervising and verifying metering and recording, collecting data, calculating emission reductions and preparing monitoring reports. And second monitoring officers help the chief officer to do all things mentioned above. Responsibilities for the monitoring activities are listed in Table 2.

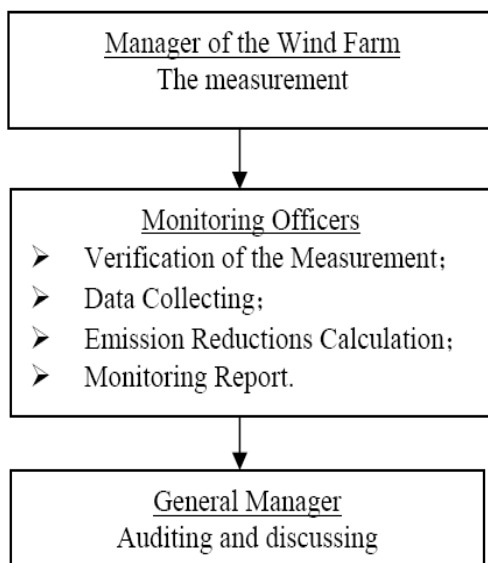


Table 2. Responsibilities for Monitoring Activities

The relevant training was implemented by the project owner and the equipment manufacturer before operation of the project.

Emergency procedures

In this monitoring period, the Project was operated smoothly and no emergency happened.

If abnormal operation happens, on-site operators should immediately report to Emergency Office. Emergency Office takes the responsibility to handle the erroneous measurement as follows:

- If the reason for erroneous measurement is the malfunction of the meter(s), the project owner and the NCPG use the data automatically obtained and saved by the computer system as backup.
- If the erroneous measurement is caused by employees in charge of recording, the project owner and the NCPG use the data automatically obtained and saved by the computer system as backup. At the same time, training courses shall be re-arranged for relevant employees to ensure the correct implementation of the monitoring plan, so as to prevent error.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

According to ACM0002, the baseline emission during this monitoring period is calculated as:

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

Where:

BE_y is the baseline emissions, tCO₂e.

EG_{facility,y} is net power supplied to the grid, MWh.

EF_{grid, CM,y} is the CO₂ emission factor of the grid which is ex-ante determined in the CDM-PDD and fixed in the crediting period, tCO₂e/MWh.

The values regarding amounts of baseline emission achieved in each vintage and in the whole monitoring period are detailed listed in table 3. The monitoring data are listed in table 4~6.

Table 3 Baseline emission achieved in this monitoring period

Monitoring period	Vintage	Baseline emission (t CO ₂ e)
27-Nov.-2010~16-Jan.-2011	27-Nov.-2010~31-Dec.-2010	48,374
	01-Jan.-2011~16-Jan.-2011	16,133
Total amount of baseline emission in this monitoring period		64,507

Table 4 Power supplied to the grid (EG_{s,y}, MWh)

Vintage	From	To	Meter readings	Data on the sales receipt ²	Data for VCU calculation
			EG _{s,y}	EG _{s,y}	EG _{s,y}
			C	D	E=Min(C,D)
27-Nov.-2010~ 31-Dec.-2010	27-Nov.-2010	30-Nov.-2010	444.84	444.84	444.84
	01-Dec.-2010	31-Dec.-2010	45,431.76	45,431.76	45,431.76
	Subtotal		-		45,876.60
01-Jan.-2011~ 16-Jan.-2011	01-Jan.-2011	16-Jan.-2011	15,337.08	15,337.08	15,337.08
	Subtotal		-		15,337.08
Total			61,213.68	61,213.68	61,213.68

² Value from the confirmation on the Power supplied to the grid for this VCS monitoring period issued by local grid company was applied.

Table 5 The electricity use of power plant supplied by the grid via the 220 kV line ($PR_{g,y}$, MWh)

Vintage	From	To	Meter readings	Data on the sales receipt ³	Data for VCU calculation
			PR _{g,y}	PR _{g,y}	PR _{g,y}
			H	I	J=Max(H,I)
27-Nov.-2010~ 31-Dec.-2010	27-Nov.-2010	19-Dec.-2010	13.20	13.20	13.20
	20-Dec.-2010	31-Dec.-2010	3.96	3.96	3.96
	Subtotal		-		17.16
01-Jan.-2011~ 16-Jan.-2011	01-Jan.-2011	16-Jan.-2011	42.24	42.24	42.24
	Subtotal		-		42.24
Total			59.40	59.40	59.40

Table 6 Net power supplied to the grid ($EG_{\text{facility},y}$, MWh)

Monitoring period	Vintage	$EG_{s,y}$	$PR_{g,y}$	$PR_{10\text{ kV},y}^*$	$EG_{\text{facility},y}$
		K	L	N	$M=K-L$
27-Nov.-2010~ 16-Jan.-2011	27-Nov.-2010~31-Dec.- 2010	45,876.60	17.16	0.00	45,859.44
	01-Jan.-2011~16-Jan.- 2011	15,337.08	42.24	0.00	15,294.84
Total		61,213.68	59.40	0.00	61,154.28

* During this monitoring period, there is no electricity imported by the project from the grid via the 10 kV line ($PR_{10\text{ kV},y}$). Confirmation issued by the local grid company was provided to the DOE.

³ Value from the confirmation on the electricity use of power plant supplied by the grid for this VCS monitoring period issued by local grid company was applied.

4.2 Project Emissions

According to the ACM0002 and the registered CDM-PDD, the emission of wind power project activity is zero, i.e. **PE_y=0**.

4.3 Leakage

According to ACM0002 and the registered CDM-PDD, the leakage of wind power project need not be considered, i.e. **LE_y = 0**

4.4 Summary of GHG Emission Reductions and Removals

In line with the registered CDM PDD, the emission reductions (ERs) are calculated as:

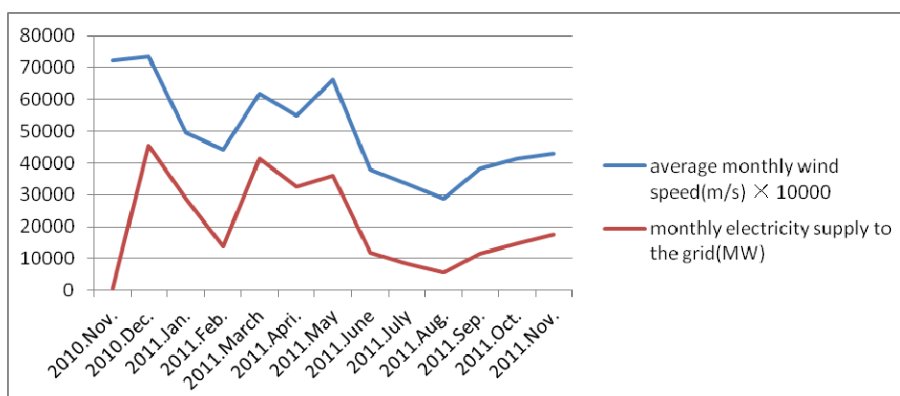
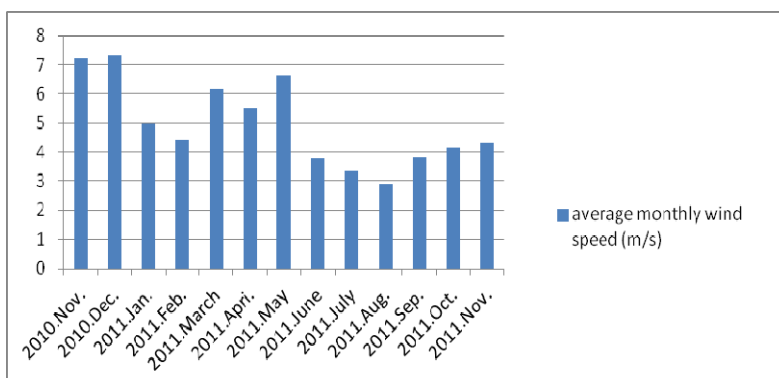
$$ER_y = BE_y - PE_y$$

The calculated results are listed in table 7.

Table 7 Emission reductions achieved in the monitoring period.

Monitoring period	Vintage	BE _y (tCO ₂ e)	PE _y (tCO ₂ e)	Emission reductions (tCO ₂ e)
27-Nov.-2010~ 16-Jan.-2011	27-Nov.-2010~ 31-Dec.-2010	48,374	0	48,374
	01-Jan.-2011~ 16-Jan.-2011	16,133	0	16,133
Total		64,507	0	64,507

According to the registered PDD, the annual estimation of emission reduction of the Year 1 (01-July-2010~30-June-2011) in the First Crediting Period is 164,926 tCO₂e, and Year 2 (01-July-2011~30-June-2012) is 329,852 tCO₂e. The estimated ERs during this VCS monitoring period are 23,044 tCO₂e (=164,926 tCO₂e /365*51), whereas the actual emission reduction accomplished by the project during this VCS monitoring period is 64,507 tCO₂e. Comparing with the estimated ERs, the actual ERs increased by 179.9% for this VCS monitoring period. In the registered CDM-PDD, the project is not full-load operating during the first operation year and the corresponding estimated emission reduction is 164,926 tCO₂e. But during the real operation, the project started commission on 27-Nov.-2010, and put into full-load operation on 08-Jan.-2011. But if we compare the difference in a longer term, i.e. from the start date of the project (i.e. 27-Nov.-2010) till the end date of (30-Nov.-2011) it can be easily found out that this difference is just temporary. The net electricity supplied to the grid is 268,303.20 MWh, which is lower than estimated net power supplied to the grid 297,707 MWh (=156,350 MWh /365*43 + 312,700 MWh /365*326) in the registered CDM-PDD. For detailed information, please refer to Table 8 and Table 9. The reason for the difference is due to the wind energy fluctuation. According to the monthly-average wind speed recorded in the monthly production report, it is obvious that the wind speed in the period from November to January in 2010 is higher than other months and the trend of the monthly electricity supplied to the grid is consistency with the monthly-average wind speed.



Note: The electricity supplied to the grid in 2010 Nov. 444.84 MW was from 27 Nov. to 30 Nov., as the 27-Nov.-2010 was the project start date.

Table 8 The net quantity of electricity exported to the grid by the project ($EG_{\text{facility},y}$ MWh)

Duration	From	To	$EG_{s,y}^*$	$PR_{g,y}$ and $PR_{10\text{ kV},y}^4$	$EG_{\text{facility},y}$
			N	P	Q=N-P
27-Nov.-2010~ 30-Nov.-2011	27-Nov.-2010	30-Nov.-2010	444.84	0	444.84
	01-Dec.-2010	31-Dec.-2010	45,431.76	0	45,431.76
	01-Jan.-2011	31-Jan.-2011	28,868.40	0	28,868.40
	01-Feb.-2011	28-Feb.-2011	13,709.52	0	13,709.52
	01-Mar.-2011	31-Mar.-2011	41,527.20	0	41,527.20
	01-Apr.-2011	30-Apr.-2011	32,502.36	0	32,502.36
	01-May-2011	31-May-2011	35,900.04	0	35,900.04
	01-Jun.-2011	30-Jun.-2011	11,990.88	0	11,990.88
	01-Jul.-2011	31-Jul.-2011	8,389.92	0	8,389.92
	01-Aug.-2011	31-Aug.-2011	5,566.44	0	5,566.44
	01-Sep.-2011	30-Sep.-2011	11,679.36	0	11,679.36
	01-Oct.-2011	31-Oct.-2011	14,688.96	0	14,688.96
	01-Nov.-2011	30-Nov.-2011	17,603.52	0	17,603.52
Total			268,303.20	0.00	268,303.20

⁴ For the most conservative and simplicity, we assume the $PR_{g,y}$ and $PR_{10\text{ kV},y}$ are zero during 27-Nov.-2010 to 30-Nov.-2011. So we can calculate the biggest percentage between the actual value and estimated value.

*The meter reading and corresponding sales receipts for period from 27-Nov.-2010 to 30-Nov.-2011 were provided to the DOE for verification.

Table 9 Comparison between the estimated net electricity supplied to grid and the actual ones achieved

Duration	Actual value	Estimated value	Comparison between the actual value and estimated value
	R(MWh)	S(MWh)	$T=(R-S)/S$
27-Nov.-2010~ 30-Nov.- 2011	268,303.20	297,707	-9.88% ⁵

5 ADDITIONAL INFORMATION

N/A

⁵ It is calculated as $(268,303.20 \text{ MWh} - 297,707 \text{ MWh}) / 297,707 \text{ MWh} = -9.88\%$.

Annex 1

Further clarification on requirements AS PER VCS Standard version 3.2

The project has been already registered under CDM, another GHG program approved by VCS. As per VCS relevant requirements specified in VCS standard version 3.0 for projects validated under the CDM, sections 1.2, 1.3, 1.5, 1.6, 1.7, 1.9, 1.10, 1.12.1, 1.12.2, 1.12.3, 1.12.4 1.13 are further clarified and or elaborated as follow:

1.2 Sectorial Scope and Project Type

The project is a new grid-connected renewable wind power plant and not a grouped project as per definition of Grouped Project.

1.3 Project Proponent

Zhuang Wang, Project Manager

Hebei Construction Investment New Energy Co., Ltd.

Tel: +86-(0)311-8527 8106, Fax: +86-(0)311-8527 8008, E-mail: zhuangwang_hecic@126.com

1.5 Project Start Date

27-Nov.-2010

1.6 Project Crediting Period

The VCS crediting period is from 27th Nov. 2010 to 16th Jan. 2011.

1.7 Project Scale and Estimated GHG Emission Reductions or Removals

Project	Yes
Mega-project	N/A

Years	Estimated GHG emission reductions or removals (tCO ₂ e)
Year 1:01-Jul.-2010~30-Jun.-2011	164,926
Year 2:01-Jul.-2011~30-Jun.-2012	329,852
Year 3:01-Jul.-2012~30-Jun.-2013	329,852
Year 4:01-Jul.-2013~30-Jun.-2014	329,852
Year 5:01-Jul.-2014~30-Jun.-2015	329,852
Year 6:01-Jul.-2015~30-Jun.-2016	329,852

Year 7:01-Jul.-2016~30-Jun.-2017	329,852
Total estimated ERs	2,144,038
Total number of crediting years	7
Average annual ERs	306,291

1.9 Project Location

The project is located within Weichang Manchu & Mongolia Autonomous County, Chengde City, Hebei Province, P.R.China. The central geographical coordinates of the project is longitude 116°57'05"E and latitude 42°11'21"N.

1.10 Conditions Prior to Project Initiation

The project is a green-field wind power plant and no renewable power plant or other type power plant was operated prior to the implementation of the project. The purpose of the project is to generate renewable power by wind energy to replace power from North China Power Grid which is dominated by fossil-fuel fired power plant.

Definitely, the implementation of the project was not to generate GHG emissions primarily for the purpose of its subsequent removal or destruction.

1.12 Ownership and Other Programs

1.12.1 Proof of Title

Letter of Approval issued by China's DNA for the Project can serve as the proof of title of the Project Owner. As described in Letter of Approval, Hebei Construction Investment New Energy Co., Ltd. is authorized as China's participant to voluntarily participate in and carry out the Project.

The Project Owner has also obtained all relevant permits to the Project including Business License, FSR Approval and Power Purchase Agreement. Moreover, the ownership of the Project Owner was described in the registered CDM-PDD validated by BV.

1.12.2 Emissions Trading Programs and Other Binding Limits

N/A

1.12.3 Participation under Other GHG Programs

The project was registered as a CDM project on 17-Jan.-2011 with Ref, No. 3476. Its estimated annual emission reductions are 329,852 tCO₂e. The project applied approved consolidated baseline and monitoring methodology ACM 0002 (Version 10).

Hebei Chengde Weichang Yudaokou Pasture 150 MW Wind Farm Project was invested and constructed by Hebei Construction Investment New Energy Co., Ltd. The project was put into commercial operation on 27-Nov.-2010. As project owner, we hereby formally promise that

emission reductions achieved during the period pre-CDM (i.e. from 27-Nov.-2010 to 16-Jan.-2011) had claimed VCUs under VCS program only.

1.12.4 Other Forms of Environmental Credit

The project neither has nor intends to generate any other form of GHG related environmental credit claimed under the VCS program, other than CO₂ emission reductions.

1.13 Additional Information Relevant to the Project

Eligibility Criteria

N/A

Leakage Management

According to ACM0002, as a wind farm project there is no need to considered leakage.

Commercially Sensitive Information

Commercially sensitive information has been excluded from the public version.

Further Information

The project is no any information relevant legislative, technical, economic, sectorial, social, environmental, geographic etc.

Annex 2 Revised Monitoring Plan

B.7. Application of the monitoring methodology and description of the monitoring plan:

B.7.1. Data and parameters monitored:

We need to monitor the power supplied to the grid ($EG_{s,y}$) and the electricity use of power plant supplied by the grid via the 220 kV line ($PR_{g,y}$) and the electricity imported by the project from the grid via the 10 kV line ($PR_{10\text{ kV},y}$) and according to the two data, the net power supplied to the grid ($EG_{facility,y}$) will be calculated ($EG_{facility,y} = EG_{s,y} - PR_{g,y} - PR_{10\text{ kV},y}$).

Data / Parameter:	$EG_{s,y}$
Data unit:	MWh
Description:	Power supplied to the grid in year y
Source of data to be used:	Measured by M1 located at the output of the on-site 220 kV transformer substation
Value of data applied for the purpose of calculating expected emission reductions in section B.5	The power supplied to the grid by the project is estimated to be 312,700 MWh
Description of measurement methods and procedures to be applied:	Measured continuously and recorded on a monthly basis
QA/QC procedures to be applied:	The meters will be annually calibrated according to the relevant national electric industry standards and regulations; power supplied to the grid will be double checked according to sales receipts.
Any comment:	Refer to B.7.2. Description of the monitoring plan

Data / Parameter:	$PR_{g,y}$
Data unit:	MWh
Description:	The electricity use of power plant supplied by the grid via the 220 kV line in year y
Source of data to be used:	Assumed zero in the PDD. Measured by M1 actually

Value of data applied for the purpose of calculating expected emission reductions in section B.5	0
Description of measurement methods and procedures to be applied:	Measured continuously and recorded on a monthly basis
QA/QC procedures to be applied:	The meters will be annually calibrated according to the relevant national electric industry standards and regulations; electricity use of power plant supplied by the grid will be double checked according to sales receipts.
Any comment:	Refer to B.7.2. Description of the monitoring plan

Data / Parameter:	$PR_{10\text{ kV},y}$
Data unit:	MWh
Description:	The electricity imported by the project from the grid via the 10 kV line in the year y
Source of data to be used:	Assumed zero in the PDD. Measured by M3 actually
Value of data applied for the purpose of calculating expected emission reductions in section B.5	0
Description of measurement methods and procedures to be applied:	Measured continuously and recorded on a monthly basis
QA/QC procedures to be applied:	The meters will be annually calibrated according to the relevant national electric industry standards and regulations; electricity use of power plant supplied by the grid will be double checked according to the sales receipts issued by the grid.
Any comment:	Refer to B.7.2. Description of the monitoring plan

Data / Parameter:	$EG_{\text{facility},y}$
Data unit:	MWh
Description:	Net power supplied to the grid in year y

Source of data to be used:	Calculated
Value of data applied for the purpose of calculating expected emission reductions in section B.5	The electricity supplied to the grid is 312.700MWh which is figured out by the equation: $EG_{facility,y} = EG_{s,y} - PR_{g,y} - PR_{10\text{ kV},y}$
Description of measurement methods and procedures to be applied:	Calculated from the above measured parameters and recorded on a monthly basis.
QA/QC procedures to be applied:	This data is calculated, so does not need QA procedures.
Any comment:	/

B.7.2. Description of the monitoring plan:

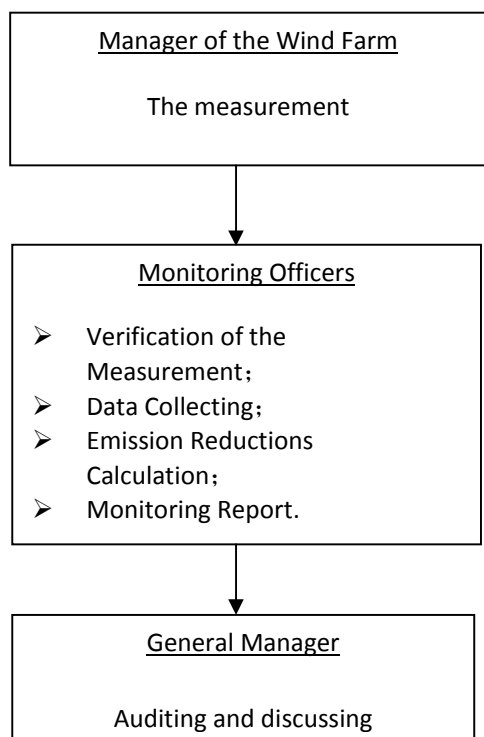
The objective of the monitoring plan is to insure the complete, consistent, clear, and accurate monitoring and calculation of the emissions reductions during the whole crediting period. The project owner is mainly responsible for the implementation of the monitoring plan, and the Grid Company should cooperate with the project owner.

1. Monitoring Date

The main data to be monitored are the power supplied to the grid ($EG_{s,y}$), the electricity use of power plant supplied by the grid via the 220 kV line ($PR_{g,y}$) and the electricity imported by the project from the grid via the 10 kV line ($PR_{10\text{ kV},y}$) and according to the two data, the net power supplied to the grid ($EG_{facility,y}$) will be calculated ($EG_{facility,y} = EG_{s,y} - PR_{g,y} - PR_{10\text{ kV},y}$)

2. Monitoring Organization

A chief monitoring officer will be appointed by the project owner, who will supervise and verify metering and recording, collect data (meter's data reading, sales receipts), calculate emission reductions and prepare monitoring reports.



3. Monitoring Equipment and program

According to the Technical Administrative Code of Electric Energy Metering (DL/T448—2000), the electric energy metering equipment will be properly configured and the metering equipment will be checked before the project starts operation.

The power generated by the proposed project will be transmitted to on-site 220kV transformer substation of the project, and then be transmitted to the NCPG through the Yudaokou 220kV Switching Station. There are 3 meters (bi-directional, 0.2S) for this project, of which, M1 (main meter) and M2 (backup meter) located at the output of the on-site 220 kV transformer substation measures power supplied to the grid and the electricity use of power plant supplied by the grid via the 220 kV line and M3 measuring the electricity imported by the project from the grid via the 10 kV line.

When the main meter has any troubles, the data monitored by the backup meter should be employed.

The power connection diagram is as follows:

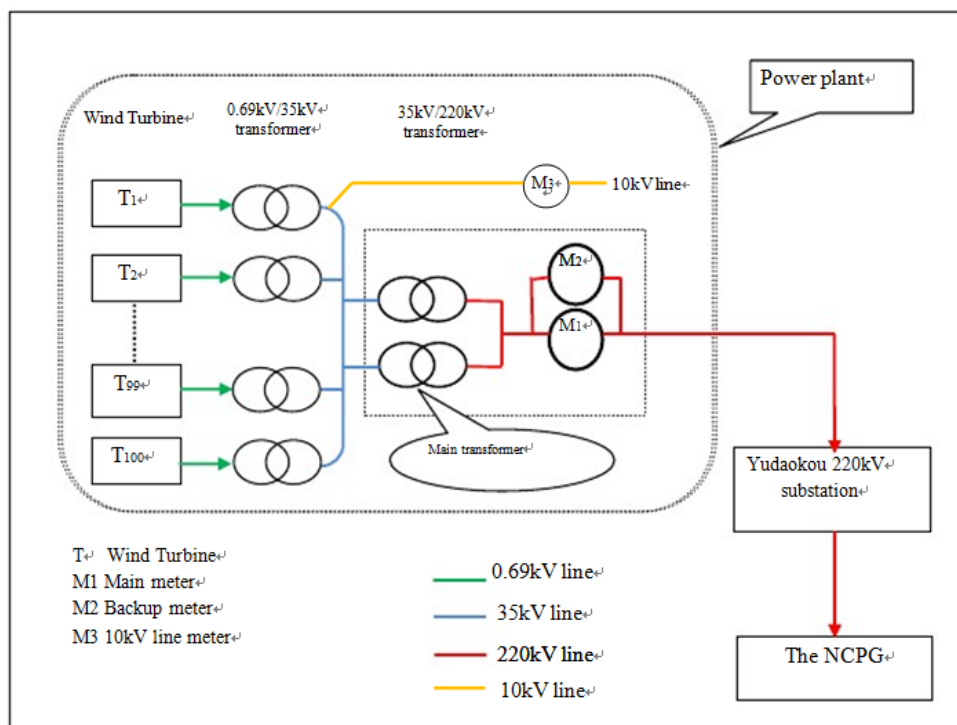


Fig. B.4 Power Connection Diagram

4. Data Collection:

The project owner is responsible for monitoring of the main meter, and guarantee the measuring equipments are in good operation and with complete seal.

The electricity recorded by the main meter alone will suffice for the purpose of the sales receipts and emission reduction verification as long as the accuracy of the Main Meter is within the permissible tolerance. The main monitoring process is as follows:

- The project owner read and check the main meter, and records the data on an appointed day of every month;
- The project owner supplies the electricity reading to the grid company on an appointed day of every month; and the grid company checks the data based on the Remote Data.
- The Grid Company provides sales receipts to the project owner based on the power supplied to the grid, and the sales receipts are stored by the project owner;
- The Grid Company provides sales receipts to the project owner based on the electricity supplied to the power plant by the grid company, and the sales receipts are stored by the project owner;
- The project owner keeps and safeguards the records of the main meter's data readings for verification by the DOE.

If inaccuracy of the reading data from the main meter exceeds the allowable tolerance or otherwise the meter mal functioned will operate in one month, the grid-connected electricity generated by the proposed project shall be followed by:

- Reading the backup meter to ensure electricity is supplied to the grid, unless a test by either party

- reveals it is inaccurate;
- ii If the backup system is not within acceptable limits of accuracy or performed improperly, the proposed project owner and the Grid Company shall jointly prepare an new agreement of the correct readings;

The meter reading shall be readily accessible for the DOE. Calibration test records shall be maintained for verification.

5. Calibration

The check of electric meter should be annually carried out according to relevant national electric industry standards or regulations. After the check, all meters should be sealed. Both meters shall be jointly inspected and sealed on behalf of the project owner and Grid Company and shall not be accessible by either party except in the presence of the other party or its accredited representatives,

All the meters installed shall be tested by the qualified metrical organization co-authorized by the project owner and the Grid Company if:

- i The error of the meters exceeds the allowable error ;
- ii The meter was repaired.

6. Data Management

Data will be archived at the end of each month using electronic spreadsheets. The electronic files will be stored on hard disk and CD-ROM. In addition, a hard copy printout will be archived. Physical documentation such as, paper-based maps, diagrams and environmental assessment, will be collected in a central place, together with the monitoring plan. In order to facilitate the auditor's reference, monitoring results will be indexed. All paper-based information will be stored by the project owner. All data records will be kept for a period of 2 years after the end of the crediting period.

7. Monitoring Report

The project owner will collect sales receipts for the power supplied to the grid as a cross-check, and sales receipts will be provided for the electricity use of power plant supplied by the grid as a cross-check. At the end of each crediting year, a monitoring report will be compiled detailing the metering results and evidence (i.e. sales receipts).