

GUOHUA RONGCHENG PHASE II WIND FARM PROJECT

Document Prepared By Beijing Ruifang Technology Co., Ltd.

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Report ID	/
Date of Issue	24/12/2019
Project ID	1301
Monitoring Period	01/02/2014 to 30/11/2019 (2099days)
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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

Guohua Rongcheng Phase II Wind Farm Project (hereinafter referred to as the Project) is located in Chengshan Town, Rongcheng City, Shandong Province, People's Republic of China. The project is invested and implemented by Guohua Resourceful (Rongcheng) Wind Power Generation Co., Ltd.

The Project has a total installed capacity of 49.5 MW, consisting of 33 wind turbines with unit capacity of 1500kW. The expected annual power delivered to the grid is 102,337MWh. The poweroutput is delivered to the North China Power Grid (NCPG) which is dominated by fossil fuel fired power via Shandong Power Grid and thus reduce greenhouse gas (GHG) emission through avoiding CO₂ emissions produced by NCPG. The expected annual emission reduction of the project is 97,240t CO₂e.

The project started on 30/06/2010, which is the date when the first power unit started operation. This monitoring period is from 01/02/2014 to 30/11/2019, and the total emission reductions are 558,798tCO₂.

1.2 Sectoral Scope and Project Type

Sectoral Scope 1, category "Energy industries (renewable - / non- renewable sources)".

The project is a single Greenfield project and is not part of a project group or bundle.

1.3 Project Proponent

Organization name	Guohua Resourceful (Rongcheng) Wind Power Generation Co., Ltd
Contact person	Xuepei Feng
Title	Manager
Address	No.3 South Road of Dongzhimen, Dongcheng District, Beijing People's Republic of China
Telephone	+86 010-58157576
Email	fengxuepei@guohua.com.cn

1.4 Other Entities Involved in the Project

Organization name	Beijing Ruifang Technology Co., Ltd.
Contact person	Teng Haipeng
Title	Manager
Address	Haidian District, Beijing, PRC China
Telephone	+86-10-86291231
Email	Teng_hp@126.com

1.5 Project Start Date

This project starts on 30/06/2010 (project started commissioning, which means that the wind turbines came into operation and started to generate electricity and emission reductions).

1.6 Project Crediting Period

The first CDM crediting period of the project is from 25/06/2011 to 24/06/2018, which could be renewed twice. the total crediting periods under CDM is from 25/06/2011 to 24/06/2032.

The first monitoring period under VCS is from 30/06/2010 to 21/06/2011. Therefore, the first crediting period of the Project is from 30/06/2010 to 29/06/2020 (10years), which could be renewed twice. According to VCS standard, the total crediting period under VCS is from 30/06/2010 to 24/06/2032.

1.7 Project Location

The proposed project is located in Chengshan Town, Rongcheng City, Shandong Province, People's Republic of China. The coordinates of the proposed project location area are 122°26'-122°31' east longitude and 37°20'-37°23' north latitude, and the coordinates of the substation centre is 122°30' 54.48" east longitude and 37°21' 31.78" north latitude.

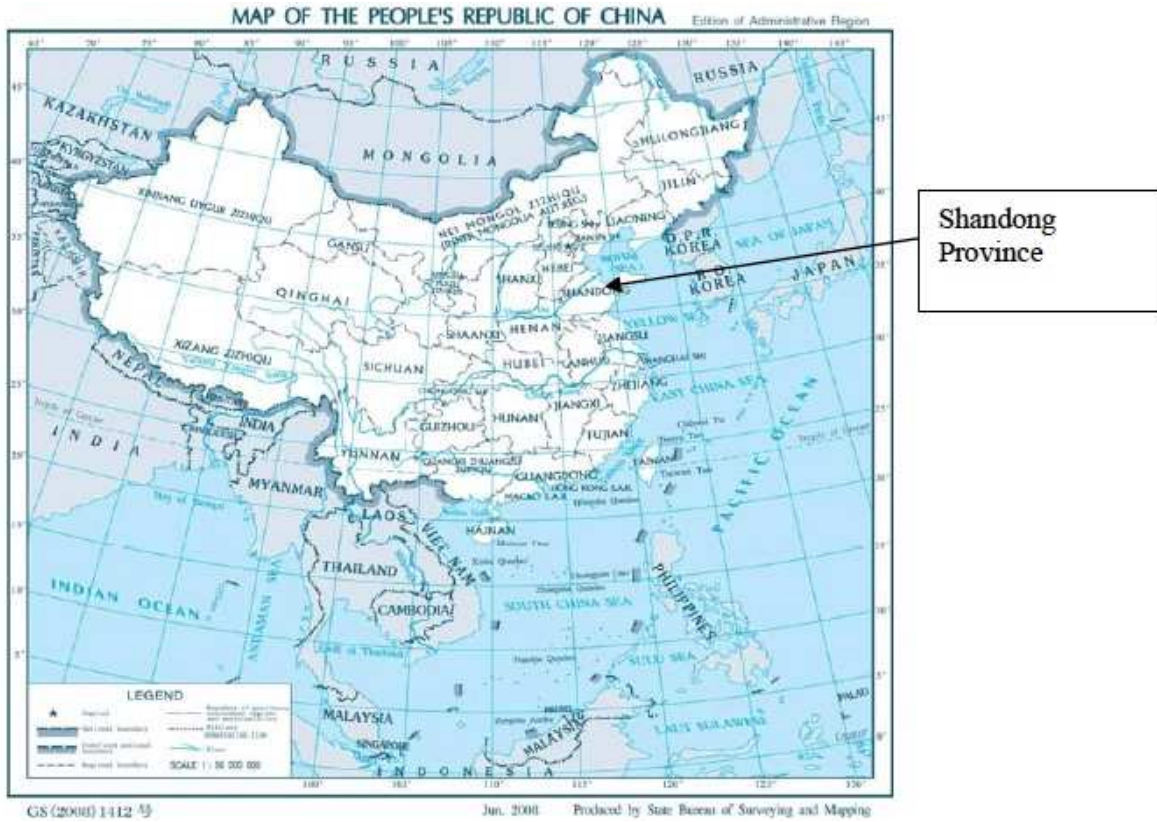


Figure 1. Project location

1.8 Title and Reference of Methodology

The approved consolidated baseline and monitoring methodology ACM0002: “Consolidated methodology for grid-connected electricity generation from renewable sources”, Version 12.1.0

The following tools are also used:

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

1.9 Other Programs

This project has been registered as a CDM project on 22/06/2011, and the registration number is 4882. The project has not claimed any other forms of environment credit. It has been issued under CDM mechanism with monitoring period from 25/06/2011 to 31/05/2012 and from 01/06/2012 to 31/01/2014.

1.10 Sustainable Development

The Project promotes sustainable development through the following aspects:

- Reducing the emission of CO₂ and other pollutants compared with fuel-fired power plant;
- Creating local employment opportunities during the construction and operation of the proposed project and improving the living standard of local people;
- Implementation of the proposed project will also contribute to the improvement of power system structure and the promotion of renewable energy development.

2 IMPLEMENTATION STATUS

2.1 Implementation Status of the Project Activity

The total capacity of the project is 49.5MW, consisting of 33 domestic wind power generating units with unit capacity of 1500k. It is expected that the annual electricity delivered to the grid will be 102,337 MWh. The electricity generated by the proposed project is exported to NCPG via Shandong Power Grid.

The key technical parameters of the wind turbines are as follows

Table 1. Major technical parameters of the key equipment

Manufacturer	Goldwind Science and Technology Co., Ltd.
Model	82/1500
1. Rotor	
Diameter	82 m
Amount of vane	3
Height of hub	70 m
Cut-in wind speed	3.0 m/s

Cut-out wind speed	22.0 m/s
2. Generator	
Rated Power	1,580kW
Rated voltage	690V
3.weight	
Weight of nacelle	11.8t(excluding rotor and generator)
Weight of generator	43.6t
Weight of vane	6.085t
Weight of rotor	32.105(including vane and hub)

The project diagram is shown in figure 2.

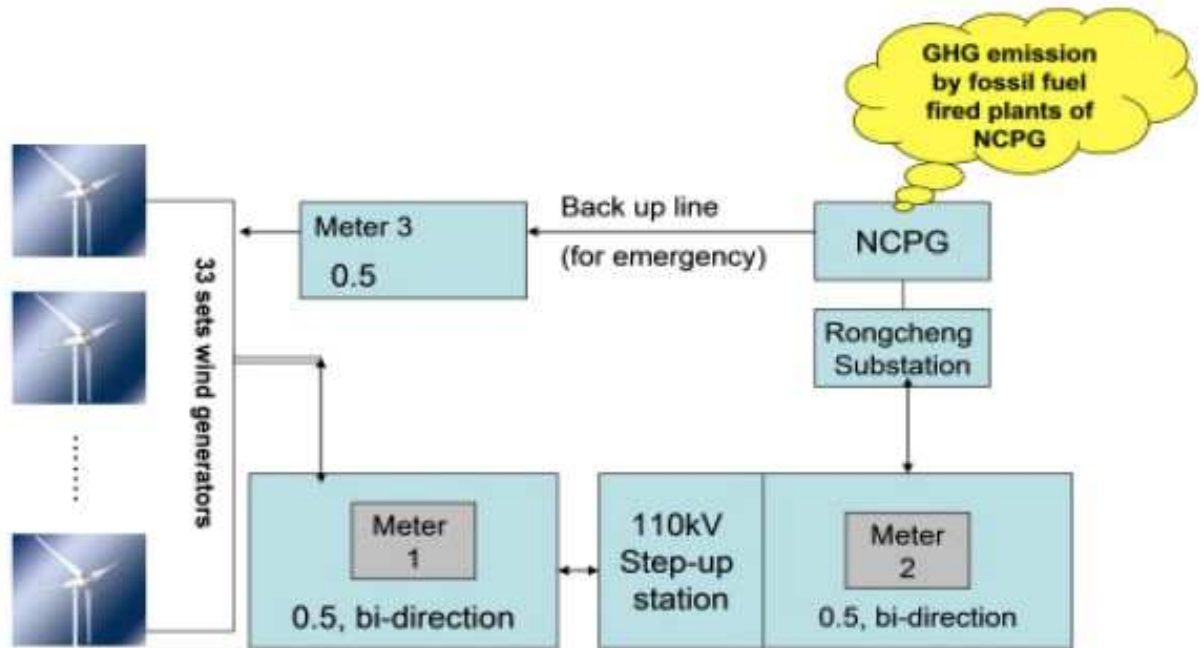


Figure 2. Project diagram

The Project started construction on 18/12/2009. The first power unit started operation on 30/06/2010, and the last power unit started operation on 29/09/2010.

During this monitoring period (from 01/02/2014 to 30/11/2019), the Project is operated and implemented well according to the project design. All the electricity meters are calibrated annually. All the data were recorded and checked by the leader of project monitoring team. And all paper and digital documents are well kept. The equipment and production activities were supervised by the working staff. No emergencies that would impact the applicability of the methodology have happened in this monitoring period.

2.2 Deviations

2.2.1 Methodology Deviations

There were no methodology deviations in this monitoring period.

2.2.2 Project Description Deviations

There is a crediting period deviation. According to the registered PD, the VCS crediting period is from 30/06/2010 to 31/06/2011.

Here, the first VCS crediting period is revised to 10 years which is conformed with VCS standard, from 30/06/2010 to 29/06/2020, which could be renewed twice. The detail is shown in section 1.6 of this MR.

2.3 Grouped Project

This is not grouped project.

2.4 Safeguards

2.4.1 No Net Harm

The project uses wind to generate electricity. It is environmentally friendly and there is no harm to the environment. Environmental Impact Assessment (EIA) has been approved by Environmental Protection Bureau of Shandong Province on 30/06/2008.

According to the EIA report, the main environmental impacts of the project are summarised as follows:

1. Impact of noise

The noise comes mainly from the construction of the proposed project. To solve this problem the project owner will mainly do the following work. Firstly, they will reduce the noise by choose machines with low noise. Secondly, in the areas near villages and schools, the machines with high noise will be used only during the construction phase and the operating time of those machines will be controlled. This kind of high noise machines will also be arranged far from people's living areas to reduce the noise affection

When the wind-farm is put into operation, the noise is mainly from the turbines. The noise of turbines employed by the proposed project is 100dB (A), considering the diffusion and attenuation, the noise is predicted to reduce to 65dB(A) when measured 120m away from the wind turbine, and reduce to 43dB(A) when measured 200m away. According to the GB3096-93 Standard of Environmental Noise of Urban Area, the noise in country area is no more than 55dB(A) during daytime and no more than 45dB(A) during night. The nearest village is 250m far away, therefore, noise will not cause big impact to nearby residents.

2. Impact of waste residue

Waste residue comes mainly from consumer wastes produced by workers while its impact can be avoided through project owner's adopting collection and uniform disposal of the wastes.

3. Impact of sewage

The sewage is mainly daily used water from the construction workers and wind farm operators, the sewage will be collectively treated and used for watering plants or lands after disposal.

4. Impact of Dust solid waste

The dust produced will be strictly controlled through regular watering and measures of reducing smoke and dust. The solid waste is main for daily life of the workers, it will be collected and transported to the waste treatment plant.

5. Main Ecological Impacts

The vegetation in the area where the proposed project located is very sparse and there is no rare endangered species, so the project construction has little impact on the diversity of local fauna and flora. There maybe some negative impact on the soil conservation. On the basis of the geomorphology, natural environment and construction method, and with the aim of reducing the negative impact, the project owner has framed a series of measures to optimize the construction and take measures to recover the vegetation.

Through the assessment of the EIA, this project has no harm to environment.

Therefore, no net harm is generated in this project.

2.4.2 Local Stakeholder Consultation

In order to invite local residents' comments, the project owner conducted a survey by ways of sending questionnaires to villagers living around the project site. In February of 2009, 50 questionnaires were sent out and all of them were collected back, the collection rate is 100% and all of them are valid. So, the valid questionnaires are 50.

The main content of the questionnaire is:

- 1) How much do you know about wind power projects and the proposed project (A lot, Nothing, A little);
- 2) What are the positive impacts the proposed project will have on your livelihood (more stable power supply, more employment opportunities, improvement of living standard);
- 3) The negative impacts of the project construction on the current environment are (Significant, Minor, No impact);
- 4) What are the negative impacts the proposed project will have on your livelihood (Noises (Significant/ Minor/ No impact)/ Air pollution (Significant/ Minor/ No impact) / Affect the TV signal (Significant/ Minor/ No impact));

- 5) The impacts of the project construction on the local economic development (Significant, Minor, No impact);
- 6) The construction of the proposed project on the local sustainable development (Significant/ Minor/ No impact);
- 7) Do you support the project construction (Yes, No, Do not care);
- 8) Your advice on the project construction;

According with the result of the questionnaires, all the residents agree and support the implementation of the proposed project; meanwhile, no negative views are found.

The survey results are as follows:

80% of the respondents know about wind power projects and the proposed project, 4% don't know wind farm project and proposed project, 16% know little;

50% of the respondents believe that the proposed project can bring more stable power supply, 40% more employment opportunities, and 10% improvement of living standard;

None of the respondents think the construction will bring large noise impacts; 10% of the respondents think the noise impact is little; and 90% of the respondents think there will be no noise impact.

None of the respondents think the construction will bring large impacts on the cultivated land; 8%% of the respondents think the impact is little; and 92% of the respondents think there will be no impact;

None of the respondents think the construction will bring materially impacts on the water resource; 12%% of the respondents think the impact is little; and 88% of the respondents think there will be no impact;

None of the respondents think the construction will bring large negative impacts on the environment; 6%of the respondents think the impact is little; and 94% of the respondents think there will be no impact;

100% of the respondents believe that the proposed project will contribute greatly to the local economic development;

100% of the respondents believe that the proposed project will has great contribution to local the sustainable development;

100% of the respondents support the construction of the proposed project;

The local officials involved in the survey addressed that the construction of the proposed project is supportive to the local economic development, and they will try their best to support the construction of the proposed project.

To sum up, most of the local residents knew about wind power projects and held positive and supportive attitude towards the construction of the proposed project. They hope that the proposed project can be put into operation as soon as possible

3 DATA AND PARAMETERS

3.1 Data and Parameters Available at Validation

Data / Parameter	$EF_{grid,CM,y}$
Data unit	tCO ₂ /MWh
Description	The combined margin emission factor of NCPG
Source of data	Official and authoritative statistics
Value applied	0.9502
Justification of choice of data or description of measurement methods and procedures applied	The detail can be referenced from the registered PDD of the project.
Purpose of the data	Calculation of baseline emission
Comments	/

3.2 Data and Parameters Monitored

Data / Parameter	$EG_{facility,y}$								
Data unit	MWh/yr								
Description	The net electricity supplied by the project activity to the grid in year <i>y</i> .								
Source of data	Electricity meters								
Description of measurement methods and procedures to be applied	$EG_{facility,y} = EG_{export,y} - EG_{import,y} - EG_{importbackup,y}$ $EG_{export,y}$, $EG_{import,y}$ and $EG_{importbackup,y}$ are continuously measured and recored monthly.								
Frequency of monitoring/recording	Monitoring continuously and recorded monthly								
Value monitored	588087.710 (total electricity exported to the grid in this monitoring period)								
Monitoring equipment	The electricity exported and imported are monitored by the electricity meter.								
QA/QC procedures to be applied	<p>The meters are calibrated and checked for accuracy periodically (once a year) according to the industry standards so that the metering equipment shall have sufficient accuracy.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Serial No.</th> <th style="width: 25%;">Calibration date</th> <th style="width: 25%;">Valid</th> <th style="width: 25%;">Accuracy</th> </tr> </thead> <tbody> <tr> <td></td> <td>02/06/2013</td> <td>01/06/2014</td> <td>0.5</td> </tr> </tbody> </table>	Serial No.	Calibration date	Valid	Accuracy		02/06/2013	01/06/2014	0.5
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	30111500 (M2)	02/06/2013 28/05/2014 22/05/2015 13/05/2016 04/05/2017 26/04/2018 19/04/2019	01/06/2014 27/05/2015 21/05/2016 12/05/2017 03/05/2018 25/04/2019 18/04/2020	0.5
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Purpose of the data	Calculation of baseline emissions			
Calculation method	/			
Comments	/			

Data / Parameter	EG _{export,y}			
Data unit	MWh			
Description	Electricity delivered to NCPG by the proposed project in the year y.			
Source of data	Electricity meter			
Description of measurement methods and procedures to be applied	The electricity imported is monitored by the electricity meter and recorded by working staff.			
Frequency of monitoring/recording	Monitoring continuously and recorded monthly			
Value monitored	590294.460 (total electricity imported from the grid in this monitoring period)			
Monitoring equipment	The electricity exported are monitored by the electricity meter.			
QA/QC procedures to be applied	The metering equipment are calibrated and checked for accuracy periodically (once a year) according to the industry standards so that the metering equipment shall have sufficient accuracy.			
	Serial No.	Calibration date	Valid	Accuracy
	10030265270079 (M1)	02/06/2013 28/05/2014 22/05/2015 13/05/2016	01/06/2014 27/05/2015 21/05/2016 12/05/2017	0.5

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Purpose of the data	Calculation of baseline emissions			
Calculation method	/			
Comments	/			

Data / Parameter	EG _{import,y}			
Data unit	MWh			
Description	Electricity consumed by the proposed project which is imported from the NCPG at the main line in the year y.			
Source of data	Electricity meter			
Description of measurement methods and procedures to be applied	Monitored by electricity meter			
Frequency of monitoring/recording	Monitoring continuously and recorded monthly			
Value monitored	2198.960 (total electricity imported at the main line in this monitoring period)			
Monitoring equipment	It is monitored by the electricity meter.			
QA/QC procedures to be applied	The metering equipment are calibrated and checked for accuracy periodically (once a year) according to the industry standards so that the metering equipment shall have sufficient accuracy.			
	Serial No.	Calibration date	Valid	Accuracy
	10030265270079 (M1)	02/06/2013 28/05/2014 22/05/2015 13/05/2016 04/05/2017 26/04/2018 19/04/2019	01/06/2014 27/05/2015 21/05/2016 12/05/2017 03/05/2018 25/04/2019 18/04/2020	0.5
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Calculation method	/																																																
Comments	/																																																

Data / Parameter	EG _{importbackup,y}																																
Data unit	MWh																																
Description	Electricity consumed by the proposed project which is imported from the NCPG at the main line in the year y.																																
Source of data	Electricity meter																																
Description of measurement methods and procedures to be applied	Monitored by electricity meter																																
Frequency of monitoring/recording	Monitoring continuously and recorded monthly																																
Value monitored	7.790 (total electricity imported at the main line in this monitoring period)																																
Monitoring equipment	It is monitored by the electricity meter.																																
QA/QC procedures to be applied	<p>The metering equipment are calibrated and checked for accuracy periodically (once a year) according to the industry standards so that the metering equipment shall have sufficient accuracy.</p> <table border="1"> <thead> <tr> <th>Serial No.</th> <th>Calibration date</th> <th>Valid</th> <th>Accuracy</th> </tr> </thead> <tbody> <tr> <td rowspan="7">10030265270079 (M1)</td> <td>02/06/2013</td> <td>01/06/2014</td> <td rowspan="7">0.5</td> </tr> <tr> <td>28/05/2014</td> <td>27/05/2015</td> </tr> <tr> <td>22/05/2015</td> <td>21/05/2016</td> </tr> <tr> <td>13/05/2016</td> <td>12/05/2017</td> </tr> <tr> <td>04/05/2017</td> <td>03/05/2018</td> </tr> <tr> <td>26/04/2018</td> <td>25/04/2019</td> </tr> <tr> <td>19/04/2019</td> <td>18/04/2020</td> </tr> <tr> <td rowspan="5">30111500 (M2)</td> <td>02/06/2013</td> <td>01/06/2014</td> <td rowspan="5">0.5</td> </tr> <tr> <td>28/05/2014</td> <td>27/05/2015</td> </tr> <tr> <td>22/05/2015</td> <td>21/05/2016</td> </tr> <tr> <td>13/05/2016</td> <td>12/05/2017</td> </tr> <tr> <td>04/05/2017</td> <td>03/05/2018</td> </tr> </tbody> </table>	Serial No.	Calibration date	Valid	Accuracy	10030265270079 (M1)	02/06/2013	01/06/2014	0.5	28/05/2014	27/05/2015	22/05/2015	21/05/2016	13/05/2016	12/05/2017	04/05/2017	03/05/2018	26/04/2018	25/04/2019	19/04/2019	18/04/2020	30111500 (M2)	02/06/2013	01/06/2014	0.5	28/05/2014	27/05/2015	22/05/2015	21/05/2016	13/05/2016	12/05/2017	04/05/2017	03/05/2018
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		19/04/2019	18/04/2020	
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		22/05/2015	21/05/2016	
		13/05/2016	12/05/2017	
		04/05/2017	03/05/2018	
		26/04/2018	25/04/2019	
		19/04/2019	18/04/2020	
	Purpose of the data	Calculation of baseline emissions		
Calculation method	/			
Comments	/			

3.3 Monitoring Plan

1. Monitoring organization

Project owner organized a special carbon project workgroup to take charge of the monitoring work of the whole project. The general manager of the project entity appointed a carbon project manager. Monitoring staff, on-site engineers and internal audit staff are responsible for the collection of the data and information required in the monitoring plan. The collected data and information is documented and sent to the carbon project manager monthly. The carbon project manager is in charge of the implementation of the monitoring plan and report to the general manager of the project owner. The general manager makes the confirmations on monitoring, calculation data and reports. The management framework is illustrated as follows:

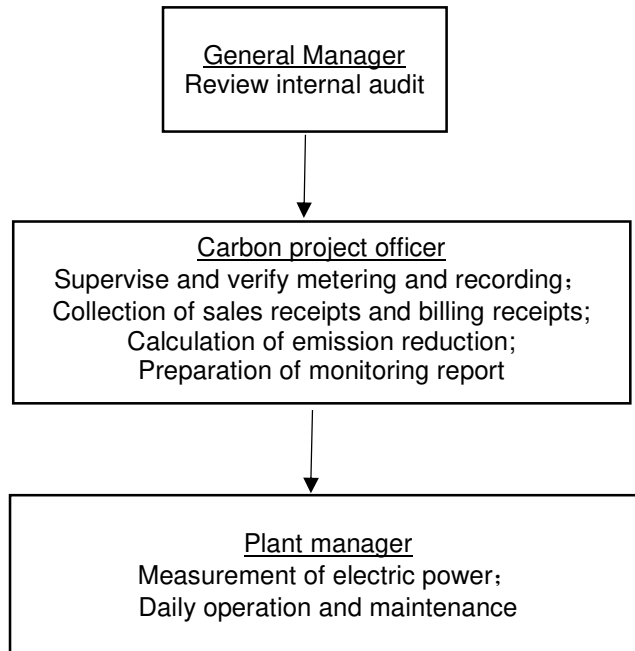
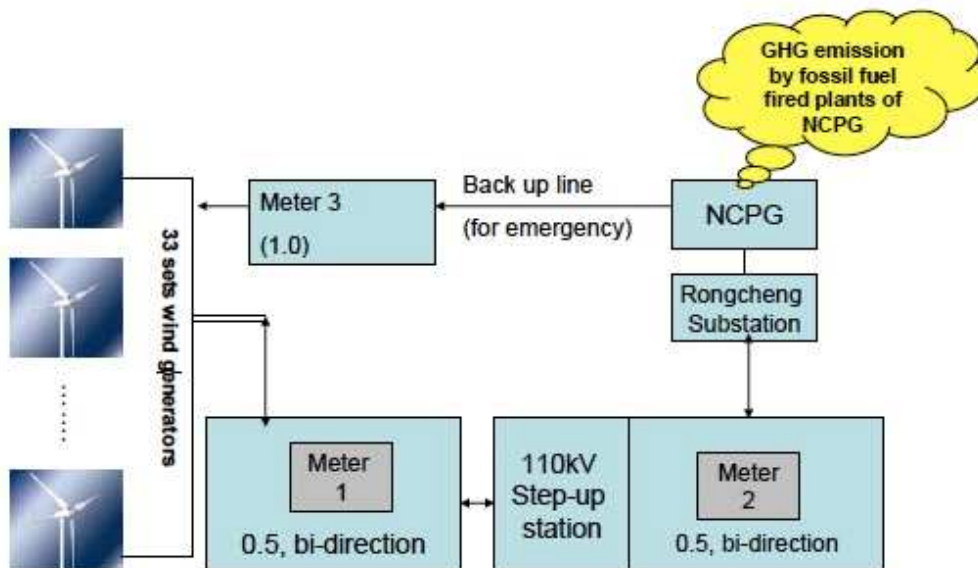


Figure 3. Monitoring organization

2. Monitoring apparatus and installation

The meters will be installed in accordance with “Technology and Management Regulations for Power Metering Devices. Two bidirectional meters will be installed at the main line to measure the electricity supply to and the electricity imported from NCPG by the project. The accuracy of the meters is 0.5 and uncertainty level of the meters will not exceed 0.5%. At the same time, for the safe operation of the project, a 10 kv back-up line will be connected for the emergency, one meter with the accuracy of 1.0 will be installed to measure the electricity imported by the back-up line. The installation of meters is as Figure 4.



3. Calibration of Meters & Metering

All the meters were calibrated annually according to national standard by qualified third party to make sure that the electricity meters are accurate. And these calibration records are maintained by the Project owner.

4. Data monitoring

The readings of meters installed in the project activity site will be used for calculating the emission reductions. The monitoring process is as follows:

- The data is measured hourly and recorded monthly;
- The project owner provides the grid company with data record. The power grid company provides the project owner with the sales of receipt;
- The project owner will provide DOE with record of net power generation data and copies of sales receipts.

5. Quality Assurances and Quality Control

The periodical calibration and maintenance of the meters comply with the related standards and regulations of national power sector, so as to ensure the precision of meters. The meters have been calibrated annually and the calibration records shown that the accuracy of the meters during the monitoring period is in line with the approved monitoring plan.

6. Emergency procedures

In case of emergencies, if the main meter is shut down, the sales receipt from the power grid would be checked by the power grid and project owner.

During this monitoring period, no emergency happened.

4 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

4.1 Baseline Emissions

According to latest ACM0002, the baseline emissions calculated as follows:

$$BE_y = EG_{\text{facility},y} * EF_{\text{grid,CM},y} = (EG_{\text{export},y} - EG_{\text{import},y} - EG_{\text{importbackup},y})$$

Where:

BE _y	Baseline emissions in year y (tCO ₂ /yr)
EG _y	Net electricity supplied by the Project to the grid (MWh/yr)
EF _y	Baseline emission factor (tCO ₂ /MWh)

Where

EG _{facility,y}	The net electricity supplied by the project activity to the grid (MWh);
EG _{export,y}	Electricity delivered to NCPG by the proposed project (MWh);
EG _{import,y}	Electricity consumed by the proposed project which is imported from the NCPG at the main line (MWh);
EG _{import backup,y}	Electricity consumed by the proposed project which is imported from the NCPG at the backup line (MWh);
EF _{grid,CM,y}	Combined margin CO ₂ emission factor for grid connected power generation in year y (tCO ₂ /MWh);

Monitoring period	EG _{export,y} (MWh)	EG _{import,y} (MWh)	EG _{importbackup,y} (MWh)	EG _{facility,y} (MWh)	EF _y (tCO ₂ /MWh)	BE _y (tCO ₂)
01/02/2014-31/12/2014	96684.400	333.680	1.680	96349.040	0.9502	91,550
01/01/2015-31/12/2015	97123.640	360.720	0	96762.920	0.9502	91,944
01/01/2016-31/12/2016	98514.360	365.600	1.650	98147.110	0.9502	93,259

01/01/2017-31/12/2017	100626.120	382.040	0	100240.720	0.9502	95,248
01/01/2018-31/12/2018	102430.440	388.440	2.100	102038.000	0.9502	96,956
01/01/2019-30/11/2019	94923.360	368.480	2.360	94549.920	0.9502	89,841
Total in this monitoring period (2099days)	590698.920	2198.960	7.790	588087.710	0.9502	558,798

The monthly data and ER breakdown are shown in appendix 1.

4.2 Project Emissions

According to the ACM0002 methodology, the project emissions (PE_y) are zero for wind power projects, and therefore the emission reductions are equal to the baseline emissions.

4.3 Leakage

According to ACM0002, no leakage needs to be considered.

4.4 Net GHG Emission Reductions and Removals

$$ER_y = BE_y - PE_y = BE_y = 558,798$$

Year	Baseline emissions or removals (tCO ₂ e)	Project emissions or removals (tCO ₂ e)	Leakage emissions (tCO ₂ e)	Net GHG emission reductions or removals (tCO ₂ e)
01/02/2014-31/12/2014	91,550	0	0	91,550
01/01/2015-31/12/2015	91,944	0	0	91,944
01/01/2016-31/12/2016	93,259	0	0	93,259
01/01/2017-31/12/2017	95,248	0	0	95,248
01/01/2018-31/12/2018	95,956	0	0	95,956
01/01/2019-30/11/2019	89,841	0	0	89,841

Total	558,798	0	0	558,798
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The estimated annual emission reductions are 97,240tCO₂e as per registered PDD. The monitoring period covers 2099 days. The ex-ante emission reductions during this monitoring period are $97,240/365 \times 2099 = 559,196$ tCO₂e. The actual emission reductions in this period are 558,798tCO₂e, which are 99.93% of the estimated value. This will not influence the additionality as per the registered PDD. Based on the registered PDD, the IRR is 7.56% when the electricity generation increases 10%, which is lower than the benchmark of 8%.

Appendix 1. Electricity Record and ER breakdown

vintage	Electricity delivered to NCPG by the proposed project in the year y. (EGexport, y)			Electricity consumed by the proposed project which is imported from the NCPG at the main line in the year y.(EGimport,y)			Electricity consumed by the proposed project which is imported from the NCPG at the backup line in the year y.(EGimportbackup,y)			The net electricity supplied by the project activity to the grid in year y.(EGfacility,y)	EF (tCO2/MWh)	ER(tCO2)
	Exported electricity of M1	Sales receipt (M2)	Min(M1,M2)	Imported electricity (M1)	Sales receipt (M2)	max(M1,M2)	Imported electricity (M3)	Sales receipt (M3)	Max(M3, sales receipt)			
01/02/2014-28/02/2014	7943.040	7904.040	7904.040	4.200	5.200	5.200	0	0	0	7898.840		
01/03/2014-31/03/2014	14885.640	14855.640	14855.640	16.800	18.800	18.800	0	0	0	14836.840		
01/04/2014-30/04/2014	13286.280	13238.280	13238.280	27.720	29.720	29.720	0	0	0	13208.560		
01/05/2014-31/05/2014	6194.160	6164.160	6164.160	21.000	22.000	22.000	1.68	1.68	1.68	6140.480		
01/06/2014-30/06/2014	3902.640	3871.640	3871.640	44.520	46.520	46.520	0	0	0	3825.120		
01/07/2014-31/07/2014	3276.840	3245.840	3245.840	41.160	42.160	42.160	0	0	0	3203.680		
01/08/2014-31/08/2014	5811.960	5763.960	5763.960	30.240	31.240	31.240	0	0	0	5732.720		
01/09/2014-30/09/2014	4458.720	4427.720	4427.720	46.200	48.200	48.200	0	0	0	4379.520		
01/10/2014-31/10/2014	9856.560	9826.560	9826.560	40.320	41.320	41.320	0	0	0	9785.240		
01/11/2014-30/11/2014	13060.320	13022.320	13022.320	29.400	31.400	31.400	0	0	0	12990.920		
01/12/2014-31/12/2014	14394.240	14364.240	14364.240	15.120	17.120	17.120	0	0	0	14347.120		
Total in 2014	97070.400	96684.400	96684.400	316.680	333.680	333.680	1.680	1.680	1.680	96349.040	0.9502	91550
01/01/2015-31/01/2015	10486.560	10486.560	10486.560	21.000	23.000	23.000	0	0	0	10463.560		
01/02/2015-28/02/2015	9940.560	9940.560	9940.560	4.200	5.200	5.200	0	0	0	9935.360		
01/03/2015-31/03/2015	12881.400	12881.000	12881.000	17.640	19.640	19.640	0	0	0	12861.360		
01/04/2015-30/04/2015	10610.040	10610.040	10610.040	28.560	30.560	30.560	0	0	0	10579.480		
01/05/2015-31/05/2015	9539.040	9539.040	9539.040	21.000	22.000	22.000	0	0	0	9517.040		
01/06/2015-30/06/2015	2100.840	2099.160	2099.160	44.520	45.520	45.520	0	0	0	2053.640		
01/07/2015-31/07/2015	1989.960	1989.960	1989.960	42.000	43.000	43.000	0	0	0	1946.960		
01/08/2015-31/08/2015	6079.920	6079.800	6079.800	31.080	32.080	32.080	0	0	0	6047.000		
01/09/2015-30/09/2015	4895.520	4895.520	4895.520	46.200	48.200	48.200	0	0	0	4847.320		
01/10/2015-31/10/2015	8614.200	8613.360	8613.360	41.160	42.160	42.160	0	0	0	8571.200		

01/11/2015-30/11/2015	9413.0 40	9412.2 40	9412.2 40	30.24 0	32.24 0	32.240	0	0	0	9380.00 0		
01/12/2015-31/12/2015	10578. 120	10577. 120	10577. 120	15.12 0	17.12 0	17.120	0	0	0	10560.0 00		
Total in 2015	97129. 200	97123. 640	97123. 640	342.7 20	360.7 20	360.72 0	0.000	0.0 00	0.00 0	96762.9 20	0.9502	9194 4
01/01/2016-31/01/2016	10773. 000	10773. 000	10773. 000	21.00 0	22.00 0	22.000	0	0	0	10751.0 00		
01/02/2016-28/02/2016	7980.8 40	7980.0 00	7980.0 00	5.040	6.040	6.040	0	0	0	7973.96 0		
01/03/2016-31/03/2016	14259. 840	14259. 840	14259. 840	17.64 0	19.64 0	19.640	0	0	0	14240.2 00		
01/04/2016-30/04/2016	11926. 320	11926. 320	11926. 320	28.56 0	30.56 0	30.560	0	0	0	11895.7 60		
01/05/2016-31/05/2016	4663.6 80	4662.8 40	4662.8 40	21.00 0	22.00 0	22.000	0	0	0	4640.84 0		
01/06/2016-30/06/2016	2157.1 20	2156.2 80	2156.2 80	45.36 0	47.36 0	47.360	1.65	1.6 5	1.65	2107.27 0		
01/07/2016-31/07/2016	4044.6 00	4044.6 00	4044.6 00	42.84 0	44.84 0	44.840	0	0	0	3999.76 0		
01/08/2016-31/08/2016	5218.0 80	5217.2 40	5217.2 40	31.92 0	32.92 0	32.920	0	0	0	5184.32 0		
01/09/2016-30/09/2016	4002.6 00	4001.7 60	4001.7 60	47.04 0	49.04 0	49.040	0	0	0	3952.72 0		
01/10/2016-31/10/2016	8848.5 60	8847.7 20	8847.7 20	42.00 0	43.00 0	43.000	0	0	0	8804.72 0		
01/11/2016-30/11/2016	11723. 880	11723. 880	11723. 880	30.24 0	31.24 0	31.240	0	0	0	11692.6 40		
01/12/2016-31/12/2016	12920. 880	12920. 880	12920. 880	15.96 0	16.96 0	16.960	0	0	0	12903.9 20		
Total in 2016	98519. 400	98514. 360	98514. 360	348.6 00	365.6 00	365.60 0	1.650	1.6 50	1.65 0	98147.1 10	0.9502	9325 9
01/01/2017-31/01/2017	12812. 520	12812. 520	12812. 520	21.84 0	23.84 0	23.840	0	0	0	12788.6 80		
01/02/2017-28/02/2017	11319. 000	11319. 000	11319. 000	5.040	7.040	7.040	0	0	0	11311.9 60		
01/03/2017-31/03/2017	8954.4 00	8953.5 60	8953.5 60	18.48 0	20.48 0	20.480	0	0	0	8933.08 0		
01/04/2017-30/04/2017	13521. 480	13521. 480	13521. 480	30.24 0	31.24 0	31.240	0	0	0	13490.2 40		
01/05/2017-31/05/2017	12531. 960	12531. 120	12531. 120	21.84 0	22.84 0	22.840	0	0	0	12508.2 80		
01/06/2017-30/06/2017	5769.1 20	5769.1 20	5769.1 20	47.04 0	48.04 0	48.040	0	0	0	5721.08 0		
01/07/2017-31/07/2017	2267.1 60	2266.3 20	2266.3 20	44.52 0	46.52 0	46.520	0	0	0	2219.80 0		
01/08/2017-31/08/2017	2147.8 80	2147.8 80	2147.8 80	32.76 0	34.76 0	34.760	0	0	0	2113.12 0		
01/09/2017-30/09/2017	5482.6 80	5481.8 40	5481.8 40	48.72 0	50.72 0	50.720	0	0	0	5431.12 0		
01/10/2017-31/10/2017	4205.0 40	4205.0 40	4205.0 40	43.68 0	45.68 0	45.680	0	0	0	4159.36 0		
01/11/2017-30/11/2017	9296.2 80	9296.2 80	9296.2 80	31.92 0	33.92 0	33.920	0	0	0	9262.36 0		
01/12/2017-31/12/2017	12318. 600	12318. 600	12318. 600	15.96 0	16.96 0	16.960	0	0	0	12301.6 40		
Total in 2017	10062 6.120	10062 2.760	10062 2.760	362.0 40	382.0 40	382.04 0	0.000	0.0 00	0.00 0	100240. 720	0.9502	9524 8
01/01/2018-31/01/2018	9733.0 80	9732.1 20	9732.1 20	22.68 0	23.68 0	23.680	0	0	0	9708.44 0		
01/02/2018-28/02/2018	11547. 480	11547. 780	11547. 480	5.040	7.040	7.040	0	0	0	11540.4 40		
01/03/2018-31/03/2018	7643.1 60	7643.3 20	7643.1 60	18.48 0	20.48 0	20.480	2.1	2.1	2.1	7620.58 0		
01/04/2018-30/04/2018	11286. 240	11285. 900	11285. 900	30.24 0	32.24 0	32.240	0	0	0	11253.6 60		
01/05/2018-31/05/2018	10784. 760	10784. 460	10784. 460	22.68 0	23.68 0	23.680	0	0	0	10760.7 80		

01/06/2018-30/06/2018	7998.4 80	7998.4 60	7998.4 60	47.88 0	49.88 0	49.880	0	0	0	7948.58 0		
01/07/2018-31/07/2018	3311.2 80	3311.4 40	3311.2 80	45.36 0	47.36 0	47.360	0	0	0	3263.92 0		
01/08/2018-31/08/2018	4190.7 60	4190.9 80	4190.7 60	33.60 0	34.60 0	34.600	0	0	0	4156.16 0		
01/09/2018-30/09/2018	5592.7 20	5592.6 80	5592.6 80	50.40 0	51.40 0	51.400	0	0	0	5541.28 0		
01/10/2018-31/10/2018	8289.9 60	8290.3 00	8289.9 60	44.52 0	45.52 0	45.520	0	0	0	8244.44 0		
01/11/2018-30/11/2018	9484.4 40	9484.6 60	9484.4 40	32.76 0	34.76 0	34.760	0	0	0	9449.68 0		
01/12/2018-31/12/2018	12568. 080	12567. 840	12567. 840	16.80 0	17.80 0	17.800	0	0	0	12550.0 40		
Total in 2018	10243 0.440	10242 9.940	10242 8.540	370.4 40	388.4 40	388.44 0	2.100	2.1 00	2.10 0	102038. 000	0.9502	9695 6
01/01/2019-31/01/2019	10809. 960	10810. 220	10809. 960	22.68 0	24.68 0	24.680	2.36	2.3 6	2.36	10782.9 20		
01/02/2019-28/02/2019	9716.2 80	9716.6 80	9716.2 80	5.040	6.040	6.040	0	0	0	9710.24 0		
01/03/2019-31/03/2019	15362. 760	15362. 600	15362. 600	18.48 0	20.48 0	20.480	0	0	0	15342.1 20		
01/04/2019-30/04/2019	13075. 440	13075. 020	13075. 020	30.24 0	31.24 0	31.240	0	0	0	13043.7 80		
01/05/2019-31/05/2019	6912.3 60	6912.1 00	6912.1 00	22.68 0	23.68 0	23.680	0	0	0	6888.42 0		
01/06/2019-30/06/2019	4163.8 80	4164.0 40	4163.8 80	48.72 0	49.72 0	49.720	0	0	0	4114.16 0		
01/07/2019-31/07/2019	2241.1 20	2240.7 80	2240.7 80	45.36 0	46.36 0	46.360	0	0	0	2194.42 0		
01/08/2019-31/08/2019	5719.5 60	5719.8 60	5719.5 60	33.60 0	34.60 0	34.600	0	0	0	5684.96 0		
01/09/2019-30/09/2019	8388.2 40	8387.8 20	8387.8 20	50.40 0	51.40 0	51.400	0	0	0	8336.42 0		
01/10/2019-31/10/2019	8932.5 60	9520.3 00	8932.5 60	44.52 0	45.52 0	45.520	0	0	0	8887.04 0		
01/11/2019-30/11/2019	9601.2 00	9600.2 00	9600.2 00	32.76 0	34.76 0	34.760	0	0	0	9565.44 0		
Total in 2019	94923. 360	95509. 620	94920. 760	354.4 80	368.4 80	368.48 0	2.360	2.3 60	2.36 0	94549.9 20	0.9502	8984 1
Total in this monitoring period	59069 8.920	59088 4.720	59029 4.460	2094. 960	2198. 960	2198.9 60	7.790	7.7 90	7.79 0	588087. 710	0.9502	5587 98