CECIC HKE ZHANGBEI LVNAOBAO WIND POWER PROJECT

Document Prepared by Demeter Venture UK Limited

Project Title	CECIC HKE Zhangbei Lvnaobao Wind Power Project
Version	3.0
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Date of Issue	14/12/2022
Project ID	VCS 727
Monitoring Period	01/12/2019 to 31/12/2021
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CONTENTS

1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

CECIC HKE Zhangbei Lvnaobao Wind Power Project (hereafter referred as "the project) is a Greenfield grid-connected wind power project. The project is invested, constructed and operated by CECIC HKE Wind Power Co., Ltd. The total installed capacity of the project is 100.5MW equipped with 67 sets of wind turbines with a unit installed capacity of 1,500kW.

The objective of the project is to generate electricity by using wind resource and deliver the generated electricity to North China Power Grid (NCPG) via a 220 kV transmission line. As a renewable energy source, the project generates emission reductions by avoiding CO_2 emissions from the same amount of electricity generation from NCPG, which is mainly dominated by fossil fuel-fired power plants.

Relevant dates for the project are as follows:

The construction of the project started on 20/08/2008, the first wind turbine of the project has been put into operation on 26/07/2010 and the commissioning time of all 67 wind turbines was 24/09/2010. The project has been registered as a CDM project on 28/10/2010 (No.3399) and was renewed on 17/08/2018. The project has been registered as a VCS project (No. 727).

This monitoring period is from 01/12/2019 to 31/12/2021, which is included in two crediting periods. The first crediting period is from 01/08/2010 to 31/07/2020, and the second crediting period is from 01/08/2020 to 31/07/2030. Therefore, this monitoring period is divided into two parts. Part 1 of this monitoring period (hereinafter referred as "the P1") is from 01/12/2019 to 31/07/2020, and Part 2 of this monitoring period (hereinafter referred as "the P2") is from 01/08/2020 to 31/12/2021. The emission reductions in P1 is 179,192 tCO_2, the emission reductions in P2 is 308,824 tCO_2. Hence, the emission reductions in this monitoring period is 488,016 tCO_2.

During the monitoring period, the monitoring activities were conducted strictly in accordance with the monitoring plan in the registered PD. The project has operated without any accidental or emergency events that might impact the accuracy and/or implementation of monitoring activities. The emission reductions in the monitoring period will be verified and issued under VCS rules.

1.2 Sectoral Scope and Project Type

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

The project is a wind power project, and is not a grouped project.

1.3 Project Proponent

Organization name	**CECIC HKE Wind Power Co., Ltd.**
Contact person	Dongjuan Chen

Title	Manager
Address	Jieneng Mansion, No.42 Xizhimen North Street, Haidian District, Beijing City, P.R.China
Telephone	+86-10-83052209
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1.4 Other Entities Involved in the Project

Organization name	**Demeter Venture UK Limited**
Role in the Project	MR Developer
Contact person	Susan Lu
Title	Manager
Address	Chaoyang District, Beijing, 100012, P.R.China
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1.5 Project Start Date

26/07/2010. (It is the date when the first turbine was commissioned.)

1.6 Project Crediting Period

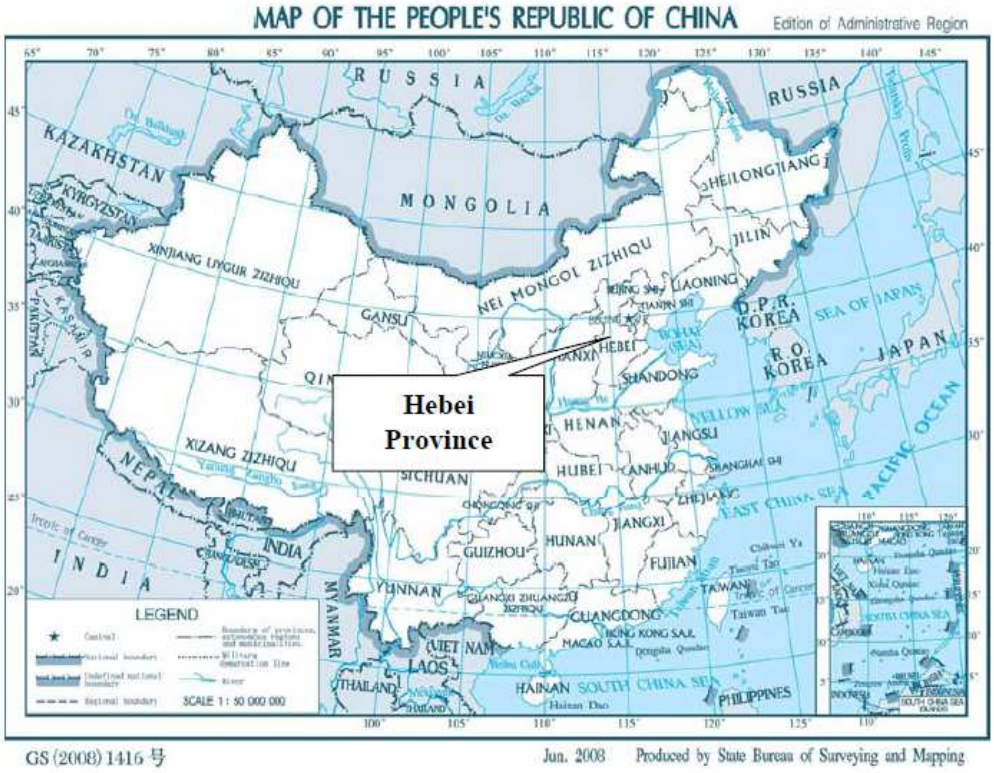
The first crediting period under VCS is from 01/08/2010 to 31/07/2020 (10 years, renewable). Therefore, the total crediting period under VCS would have been from 01/08/2010 to 31/07/2040 (30 years). However, the project was registered under CDM on 28/10/2010. And the total crediting period under CDM is from 28/10/2010 to 27/10/2031 (21years).

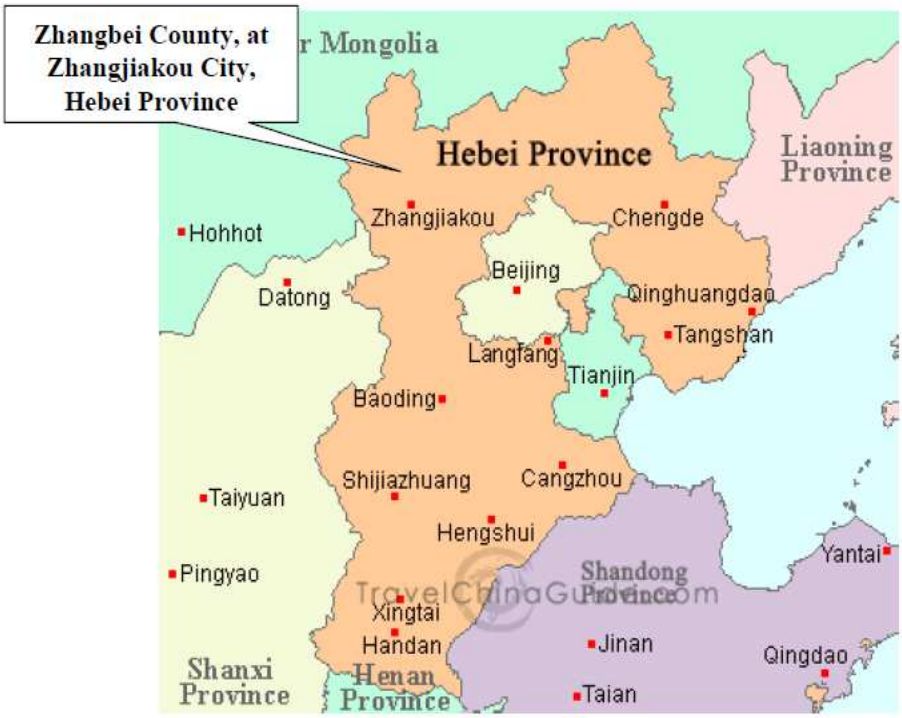
According to VCS standard, the total crediting period under VCS is from 01/08/2010 to 27/10/2031.

1.7 Project Location

The project is located at Zhangbei County, Zhangjiakou City, Hebei Province, P.R.China. The Project has geographical coordinates with North Latitude of 41˚03'50", East Longitude 114˚32'30".

The location of the project in Hebei Province and the location of Hebei Province in China are shown in Figure 1.





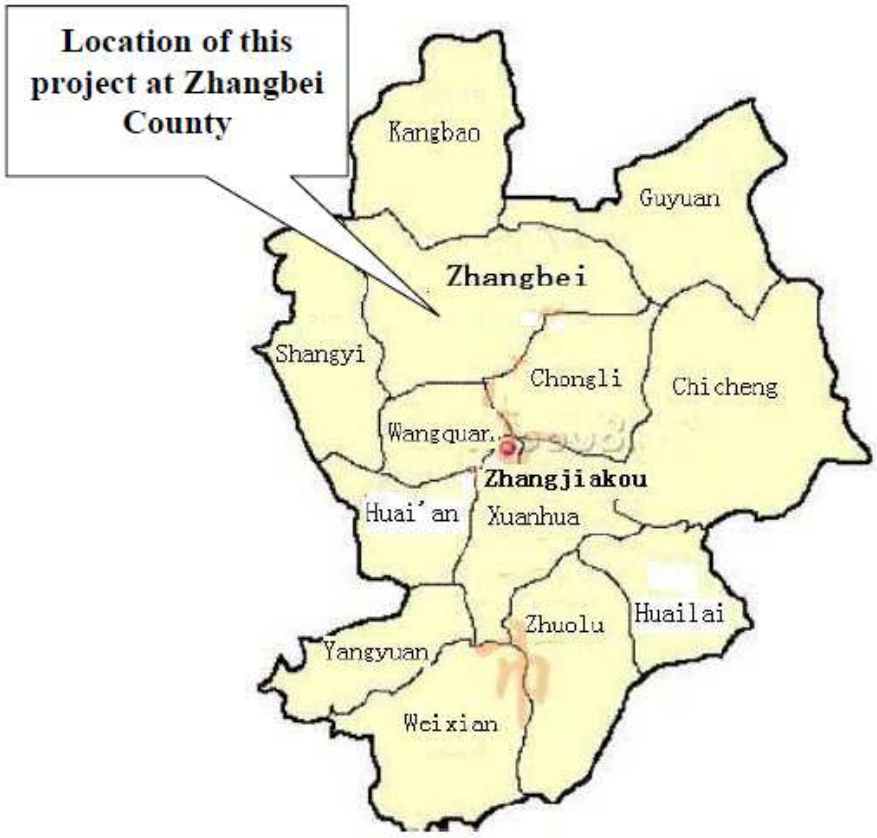


Figure 1. The location of the project in Hebei Province

1.8 Title and Reference of Methodology

For P1, the Project applies the approved consolidated baseline and monitoring methodology ACM0002 - Consolidated methodology for grid-connected electricity generation from renewable sources (version 10).

The methodology also refers to the following tools:

Tool for the demonstration and assessment of additionality (version 5.2).

Tool to calculate the emission factor for an electricity system (Version 02).

For P2, the Project applies the approved consolidated baseline and monitoring methodology ACM0002 "Grid-connected electricity generation from renewable sources." (Version 20.0).

The methodology also refers to the following tools:

Tool to calculate the emission factor for an electricity system (Version 07.0);

Tool for the demonstration and assessment of additionality (Version 07.0.0).

Reference: http://cdm.unfccc.int/methodologies/PAmethodologies/approved

1.9 Participation under other GHG Programs

This project has been registered as a CDM project on 28/10/2010, for which a renewable crediting period of 3×7 years will be used under the CDM GHG Program. The registration number is 3399. It has issued carbon credits under CDM for six times, for which the monitoring periods are 28/10/2010-28/02/2011, 01/03/2011-29/02/2012, 01/03/2012-31/12/2012, 01/01/2013-31/12/2013, 01/01/2014-31/12/2014, 01/01/2015-31/08/2015.

The credits in this monitoring period (01/12/2019- 31/12/2021) has not been counted and will not be counted under other kind of GHG programs.

1.10 Other Forms of Credit

Emission Trading Programs and Other Binding Limits: The project proponent confirmed that, once emission reductions generated from 01/12/2019 to 31/12/2021 are issued under VCS rules, those credits will not be claimed as CERs and will be claimed as zero in the possible future CER monitoring report. And issued VCUs will be sold only once to one particular buyer. Once the project proponent are included in an emissions trading program or any other mechanism that includes GHG allowance trading, the VCU issuance under VCS rules will be stop immediately since the date of included in an emissions trading program or any other mechanism that includes GHG allowance trading.

Other Forms of Environmental Credit: The Project is a renewable energy generation project, which discharges no emission during operation period. Thus, the project doesn't fall into categories that creating GHG emissions primarily for the purpose of its subsequent removal or destruction. The project has not created another form of environmental credit, which will be verified by DOE. And the project will not create other environmental credit in the future

1.11 Sustainable Development

The project promotes sustainable development through the following aspects:

- Reduce greenhouse gas emissions compared to the business-as-usual scenario;
- Help to stimulate the growth of the wind power industry in China;
- Reduce the emission of other pollutants resulting from the power generation industry in China, compared to a business-as-usual scenario;
- Create local employment opportunities during the construction and operation of the project;
- Stimulate the development of local tourism industry.

2 SAFEGUARDS

2.1 No Net Harm

The EIA Form of the project was approved by Hebei Province Environmental Protection Bureau on 19/11/2007 (Document No. Ji Huan Biao [2007] 338). According to the EIA Form, environmental impacts possibly caused by the project and treatment measures adopted by the Project Owner are analyzed as follows:

2.1.1 The analysis of the environment impact during the construction period

• Dust: Since the local residential area is at least 500m away from the wind farm site, the impact of construction dust to the local region is limited. Several measures will be implemented to reduce the impact of dust on local residents and the construction staff, including watering and earthwork covering.

• Noise: Construction machines, transportation vehicles and construction work will generate noise. However, the noise levels are within acceptable levels at the nearest habitation, which is 500m away from the project site. Furthermore, using machinery and equipments with low noise levels, and arranging the construction times during day time, reduces the impact to the environment significantly.

• Solid waste: The solid wastes from the construction include waste soil and stone and construction wastes, as well as some waste from human life. All these wastes are collected and disposed properly to the landfill site of Zhangbei County.

• Waste water: The waste water will be generated from construction work and the project office. The total volume is small and it can be treated and re-used as watering or sprinkler.

• Ecosystem: After construction, the land temporally occupied by the project will be recovered by grass, so as to recreate the original ecosystem. So the Project has little impact to the ecosystem.

2.1.2 The analysis of the environment impact during operation period

• Noise: The operating noise of these turbines ranges from 101 dB to 105dB. With at least 500 meters far from the turbines, where residential areas are located, the noise has been greatly weakened to about 37 db, dropping down below the national standard (No. GB 3096-93) of 45dB in night and 55 db in daytime. There are no effects on the local residential life from the operational noise.

• Waste: Solid waste and waste water will be produced by operation staff during operation period. The emitted waste quantity is very small and will cause no interference with the environment after proper treatment or integrated utilization.

• Impact on birds: The site of the Project is not the main habitat of migratory bird, and also not on the main line of bird migratory. Also the often-seen birds in this region are commonly with a small size and flexible in flying. They are easy to find the huge wind blades and avoid the hitting. So the project will not bring obvious effects on birds.

Conclusion

Wind power is green power and the impact caused by wind farm on the surrounding ecosystem and residents, water, and atmosphere etc is very little. Therefore, the project is feasible from aspect of environment protection.

2.2 Local Stakeholder Consultation

2.2.1 Brief description how comments by local stakeholders have been invited and compiled

On 10/03/2008, consultations were carried out in the Zhangbei County by the project owner. The consultations included two parts. One is the discussions among local people with the developer, and the another is a questionnaire survey.

The developer introduced the background of the project firstly according to the meeting schedule and respondents filled in a questionnaire, and then a discussion meeting is raised to get the comments and suggestions from local people.

1) Project brief introduction

2) Respondent's information on name, gender, education level etc.

3) Questions on:

- Is the environment quiet where you are living, working and studying?

- Do you feel any impact on surrounding environment (air, noise & water) by the project construction?

- Are there any adverse impacts on your and your family's life, work and study by the project construction? (if yes, please explain in the attached pages.)

- Whether the completion of the project will bring about positive impacts to you?

- What is the issue that you are most concerned with during the construction and operation period of the project? (Options: Noise, air pollution, equipment safety, waste water, electromagnetic interference, or landscape destroy)

- Do you agree with the development & construction of the project?

- Do you think which environmental protection measures should be undertaken during the construction

and operation period of the project?

- Do you have any further comment and suggestion about the project?

2.2.2 Summary of the comments received

The questionnaires were sent to 35 respondents and the survey had a 100% response rate. The statistical results of the questionnaire survey to the stakeholders are summarized as following:

Indicator	Total	Male	Female	Young (10-35)	Middle (35-55)	Elder (55-70)
Number of Respondents	35	26	9	11	18	6

Indicator	Below junior high school	Junior high school	Above junior high school	Student	Farmer	Worker	Officials
Number of Respondents	12	20	3	1	30	3	1

Questionnaire			Yes (Num.)	No (Num.)	Not clear (Num.)
1. Is the environment quiet where you are living, working and studying?			33	1	1
2. Do you feel any impact on surrounding environment (air, noise & water) by the project construction?			7	23	5
3. Are there any adverse impacts on your whole family's life, work and study by the project construction?			1	29	5
4.Whether the completion of the project will bring about positive impacts to you?			24	1	10
5. Which issue you are most concerned with during the construction and operation period of the project?			(Multi options)		
Noise	Air Pollution	Equipment safety	Waste water discharge	Elec-magnetic wave disturb	Sight damage
16	7	18	0	4	16
6. Do you agree with the development & construction of the project?			31	0	4

Most respondents (31/35) agree and support the development of the project. Some respondents provide their concern in the section of Question 5 and descriptive questions on the possible negative impacts possible caused by the project, including land occupation, grass and road

destroy, noise of truck at night etc, which possibly occur at the period of construction and all of these were mentioned and designed to be solved in EIA report.

Conclusions of the meeting discussions:

With respect to local economic development, this wind farm project is expected to greatly promote the development of wind power in Hebei Province. Hopefully this project could also help drive the local economic growth and contribute much to local fiscal revenues. Wind electricity can provide "green energy" for the Hebei power grid and boost local sustainable development.

With respect to environmental protection, the environmental impact analysis (EIA) for this project shows that noise level associated with the operation of this wind-turbine can meet the permitted range of China's national standard. As is known this project is geographically located far from the downtown of Zhangbei County, apparently without the possibility of telecommunication signal jamming. In addition, no migratory bird is flying over this region.

With respect to local people's life and employment, the project is basically without negative impact on the people's daily life, but can be possible to employ some local farmers or herdsmen nearby. During the construction and operation of this project, the related purchases and consumption could promote local business and trade, thus increasing local farmer's income.

To sum up, the stakeholders are very supportive of this project and looking forward to the operation of the project as early as possible. And the project owner will strengthen the communication with the stakeholders, and confirm the measurements given in the EIA report will be implemented totally to solve the issues the local people concern mostly, including land occupation, grass and road destroy, noise of truck at night etc at the construction period.

For continuous communication with local stakeholders, the project owner public its office telephone to local people and put a guest's book in the office of the company. Anyone who have comments on the project could write on the book or leave messages by phone. And after these years' operation, no negative comments were received from local people.

2.3 AFOLU-Specific Safeguards

This project is not an AFOLU project. Therefore, this section is not applicable.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project started construction on 20/08/2008. The first wind turbine of the project started commissioning on 26/07/2010. The project was put into full operation on 24/09/2010.

The project is a greenfield grid-connected wind power project. The project adopts the domestically-made wind turbines, and does not involve international technology transfer. These turbines will be manufactured and assembled by Dongfang Steam Turbine Co. Limited. The total installed capacity of the project is 100.5MW equipped with 67 sets of wind turbines (Model type: FD77B) with a unit installed capacity of 1.5MW. Electricity generated by the project is delivered to NCPG via a 220 KV transmission line.

Key technical specifications of FD77B turbines are listed as Table 1 below.

Table 1. Main technical parameters of key equipment in the project

Item	Technical parameters
Type of Turbine	FD77B
Rated power (kW)	1500
Number of Blades	3
Rotor diameter (m)	77
Swept area (m^2)	4657
Rated Rotational speed (rpm)	9.6-17.3
Cut-in wind speed (m/s)	3
Rated wind speed (m/s)	12.5
Cut-out wind speed (m/s)	20
Hub height of the wind turbines (m)	70
Capacity (kW)	1500
Rated Voltage (V)	690

During this monitoring period (01/12/2019-31/12/2021), the monitoring system of the project was implemented in line with the monitoring plan. The wind farm had a good running, no equipment is overhauled or replaced in this monitoring period. No events or emergency occurred during the monitoring period, which may impact the emission reductions and monitoring.

3.2 Deviations

3.2.1 Methodology Deviations

There is no methodology deviation in this monitoring period.

3.2.2 Project Description Deviations

The project was registered under CDM scheme on 28/10/2010 with reference number of 3399. According to CDM standard, the crediting period is from 28/10/2010 to 27/10/2017, which could be renewed twice.

Then the project was registered under VCS scheme in 2011. In the registered PD, the project commission date is 01/08/2010 and crediting period is from 01/08/2010 to 27/10/2010. The first issuance under is from 01/08/2010 to 27/10/2010. While according to VCS standard Version 3.7, the project crediting period is allowable for 10 years and could be renewed twice. Therefore, the first crediting period of project has been determined as 01/08/2010 to 31/07/2020.

The deviation has no impact for the applicability of the methodology, additionality or the appropriateness of the baseline scenario and meet all appropriate rules and requirements of VCS standard.

3.3 Grouped Projects

Not applicable as this is not a grouped project.

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	$EF_{grid,CM,y}$
Data unit	tCO_2e/MWh
Description	Baseline emission factor: the combined emission factor of the project grid system. $EF_{grid,CM,y}$ was not directly available at validation but calculated based on other parameters in the PD available at validation, therefore in the MR, only $EF_{grid,CM,y}$ is included and the rest of the parameters are either used to calculate $EF_{grid,CM,y}$ or not used in the MR.
Source of data	Registered PD for P1, and renewed PD for P2.
Value applied	1.05485 for P1, 0.8405 for P2.
Justification of choice of data or description of measurement methods and procedures applied	For P1, Notification on 2008 baseline emission factors for regional power grids in China, issued by China DNA and the registered PD. http://www.mee.gov.cn/ywgz/ydqhbh/wsqtkz/201812/W020181220585204502948.pdf

	For P2, Notification on 2019 baseline emission factors for regional power grids in China, issued by China DNA and the renewed PD. http://www.mee.gov.cn/ywgz/ydqhbh/wsqtkz/202012/t20201229_815386.shtml
Purpose of Data	Calculation of baseline emissions
Comments	The emission factor of the project was ex-ante determined and is fixed during the first crediting period. All data and parameters had been determined at registration.

4.2 Data and Parameters Monitored

Following approved methodology ACM0002, the data that is required to be monitored to establish the emission reductions, is the net electricity supplied by the project activity to the grid (EG_y) in the P1 and Quantity of net electricity generation supplied by the project plant/unit to the grid in year y ($EG_{facility,y}$).

Data / Parameter	$EG_{togrid,y}$
Data unit	MWh
Description	Quantity of annual electricity exported to the grid by the project.
Source of data	Monitored from electricity meters within the wind farm.
Description of measurement methods and procedures to be applied	Two sets of bi-direction ammeters are employed at the 220kV substation by the project, one of which is for backup. The electricity delivered to the grid will be monitored through the bi-direction metering equipment. Monthly power exported to NCPG will be approved and signed off by monitoring and auditing staff before it is accepted and stored.
Frequency of monitoring/recording	Measuring continuously / Reading monthly.
Value monitored	170,458.125 for P1; 368,429.700 for P2.
Monitoring equipment	

Type	Serial No.	Accuracy	Calibration date	Validity of the Calibration	Calibration frequency
ACE8000		0.2s	28/06/2019	27/06/2020	Annually

		37006426 Main meter		10/06/2020	09/06/2021	
				28/05/2021	27/05/2022	
	ACE8000	37006420 Backup meter	0.2s	28/06/2019	27/06/2020	Annually
				10/06/2020	09/06/2021	
				28/05/2021	27/05/2022	
QA/QC procedures to be applied	Monthly power exported to the NCPG is cross-checked against sales receipts. The metering equipments are calibrated and checked for accuracy according to the industry standards so that the metering equipment shall have sufficient accuracy.					
Purpose of the data	Calculation of baseline emissions					
Calculation method	/					
Comments	/					

Data / Parameter	$EG_{fromgrid,y}$
Data unit	MWh
Description	Quantity of annual electricity imported from the grid by the project.
Source of data	Monitored from electricity meters within the wind farm.
Description of measurement methods and procedures to be applied	Two sets of bi-direction ammeters are employed at the 220kV substation by the Project, one of which is for backup. The electricity imported from the grid will be monitored through the bi-direction metering equipment. Monthly power imported from NCPG will be approved and signed off by monitoring and auditing staff before it is accepted and stored.
Frequency of monitoring/recording	Measuring continuously / Reading monthly.
Value monitored	579.150 for P1; 991.650 for P2.

Monitoring equipment	<table><tr><th>Type</th><th>Serial No.</th><th>Accuracy</th><th>Calibration date</th><th>Validity of the Calibration</th><th>Calibration frequency</th></tr><tr><td>ACE8000</td><td>37006426 Main meter</td><td>0.2s</td><td>28/06/2019</td><td>27/06/2020</td><td>Annually</td></tr><tr><td></td><td></td><td></td><td>10/06/2020</td><td>09/06/2021</td><td></td></tr><tr><td></td><td></td><td></td><td>28/05/2021</td><td>27/05/2022</td><td></td></tr><tr><td>ACE8000</td><td>37006420 Backup meter</td><td>0.2s</td><td>28/06/2019</td><td>27/06/2020</td><td>Annually</td></tr><tr><td></td><td></td><td></td><td>10/06/2020</td><td>09/06/2021</td><td></td></tr><tr><td></td><td></td><td></td><td>28/05/2021</td><td>27/05/2022</td><td></td></tr></table>
QA/QC procedures to be applied	Monthly power imported from NCPG is cross-checked against receipts. The metering equipments are calibrated and checked for accuracy according to the industry standards so that the metering equipment shall have sufficient accuracy.
Purpose of the data	Calculation of baseline emissions
Calculation method	/
Comments	/

Data / Parameter	EG_y/$EG_{facility,y}$[1]
Data unit	MWh
Description	Net electricity supplied to the grid by the Project/Quantity of net electricity generation supplied by the project plant/unit to the grid in year y[2].
Source of data	Monitored from electricity meters within the wind farm and calculated
Description of measurement methods	Result of $EG_{togrid,y}$ minus $EG_{fromgrid,y}$

[1] The names of the parameter are from the PD for CP1 and CP2 respectively.
[2] The descriptions of the parameter are from the PD for CP1 and CP2 respectively.

<table>
<tr><td>and procedures to be applied</td><td></td></tr>
<tr><td>Frequency of monitoring/recording</td><td>Measuring continuously / Reading monthly</td></tr>
<tr><td>Value monitored</td><td>169,878.975 for P1;
367,438.050 for P2.</td></tr>
<tr><td>Monitoring equipment</td><td>
<table>
<tr><th>Type</th><th>Serial No.</th><th>Accuracy</th><th>Calibration date</th><th>Validity of the Calibration</th><th>Calibration frequency</th></tr>
<tr><td rowspan="3">ACE8000</td><td rowspan="3">37006426 Main meter</td><td rowspan="3">0.2s</td><td>28/06/2019</td><td>27/06/2020</td><td rowspan="3">Annually</td></tr>
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<tr><td rowspan="3">ACE8000</td><td rowspan="3">37006420 Backup meter</td><td rowspan="3">0.2s</td><td>28/06/2019</td><td>27/06/2020</td><td rowspan="3">Annually</td></tr>
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<tr><td>28/05/2021</td><td>27/05/2022</td></tr>
</table>
</td></tr>
<tr><td>QA/QC procedures to be applied</td><td>Monthly power exported and imported to the NCPG are cross-checked against sales receipts. The metering equipments are calibrated and checked for accuracy according to the industry standards so that the metering equipment shall have sufficient accuracy.</td></tr>
<tr><td>Purpose of the data</td><td>Calculation of baseline emissions</td></tr>
<tr><td>Calculation method</td><td>$EG_y = EG_{togrid,y} — EG_{fromgrid,y}$</td></tr>
<tr><td>Comments</td><td>/</td></tr>
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4.3 Monitoring Plan

4.3.1 Monitoring system organization

Overall responsibility for monitoring and carrying out the monitoring following this monitoring plan lies with CECIC HKE WIND POWER CO., LTD. The company will assign dedicated people

responsible for the monitoring and reporting of the generation and emission reductions of the project activity. The operating and management structure is illustrated as followed:

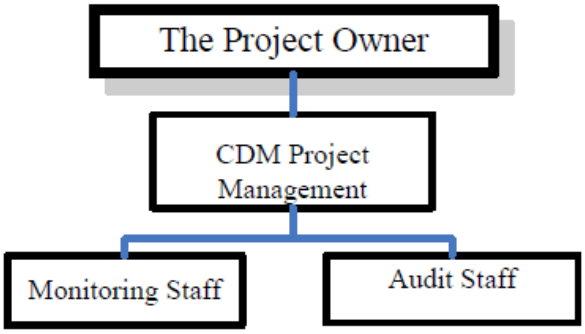


Figure 2. Monitoring system organization

4.3.2 Installation of meters

Two sets of bi-direction ammeters in the 220KV substation within the wind farm are employed by the project, one of which is for backup. Every month the 220kV substation in the wind farm will report the electricity exchanged between the project and NCPG.

4.3.3 Calibration of meters & metering

The metering equipment will be calibrated and checked by qualified third party for accuracy according to local industry standards so that the metering equipment shall have sufficient accuracy of 0.5s. Both meters shall be jointly inspected and sealed on behalf of the parties concerned and shall not be interfered with by either party except in the presence of the other party or its accredited representatives.

All the meters installed shall be tested by the NCPG within 10 days after: the detection of a difference larger than the allowable error in the readings of both meters; the repair of all or part of meter caused by the failure of one or more parts to operate in accordance with the specifications.

If any errors are detected the party owning the meter shall repair, recalibrate or replace the meter giving the other party sufficient notice to allow a representative to attend during any corrective activity.

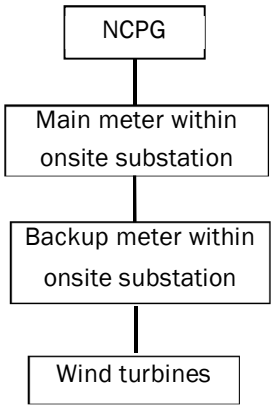
Should any previous month's reading of the main meter be inaccurate by more than the allowable error, or otherwise functioned improperly, the net generation output shall be determined by: (a) first, by reading backup meter, unless a test by either party reveals it is inaccurate; (b) if the backup system is not with acceptable limits of accuracy or operation is performed improperly the project owner and the grid company shall jointly prepare a reasonable and conservative estimate of the correct reading, and provide sufficient evidence that this estimation is reasonable and

conservative when DOE undertakes verification; and (c) if the two parties fail to agree then the matter will be referred for arbitration according to agreed procedures.

4.3.4 Data collection and management system

As described in the monitoring plan, the project wind farm records reading monthly from the meter equipment within the project site.

The net electricity generation of the project was monitored through the main bi-directional metering equipment installed at the high level of the onsite 220kV substation, recording exported to the grid by the project ($EG_{togrid,y}$)and imported from the grid by the project ($EG_{fromgrid,y}$). The meters reading are recorded monthly at the last day 24:00 each month. The net generation supplied is calculated as exports minus imports. The data was monitored continuously, and the results of reading was recorded and supplied to Zhangjiakou Electric Power Company monthly. The monitoring points shows below:



Designated personnel of the wind farm read and record the readings of the meters mentioned above monthly. The CDM manager of the project wind farm checked out the reported data against with the sales receipts before archived.

All data including calibration records was kept until 2 years after the end of the total crediting period of the project.

4.3.5 Quality control

Monthly net generation data will be approved and signed off by monitoring and auditing staff before it is accepted and stored.

This audit will check compliance with operational procedures in this monitoring plan.

This internal audit will also identify potential improvements to procedures to improve monitoring and reporting in future years. If such improvements are proposed, these will be reported to the DOE and only operated after approval from the DOE.

4.3.6 Emergency Procedures

If any errors are detected the party owning the meter shall repair, re-calibrate or replace the meter giving the other party sufficient notice to allow a representative to attend during any corrective activity.

Should any previous month's reading of the main meter be inaccurate by more than the allowable error, or otherwise functioned improperly, the net generation output shall be determined by:

(a) first, by reading backup meter, unless a test by either party reveals it is inaccurate;

(b) if the backup system is not with acceptable limits of accuracy or operation is performed improperly, the project owner and the grid company shall jointly prepare a reasonable and conservative estimate of the correct reading, and provide sufficient evidence that this estimation is reasonable and conservative when DOE undertakes verification; and

(c) if the two parties fail to agree then the matter will be referred for arbitration according to agreed procedures.

The project is operated and implemented smoothly during this monitoring period. Neither emergencies happened to the monitoring system, nor did events or situations occur during the monitoring period.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

According to ACM0002 and the registered PDD of the project, the baseline emission BE_y during the monitoring period results from:

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

$$EG_y = EG_{togrid,y} - EG_{fromgrid,y}$$

Where:

BE_y is the baseline emissions of the project;

$EF_{grid,CM,y}$ is the combined margin baseline emission factor of the NCPG;

EG_y is the net electricity supplied to the grid by the project;

$EG_{togrid,y}$ is the quantity of electricity exported to the grid by the project;

$EG_{fromgrid,y}$ is the quantity of electricity imported from the grid by the project.

The yearly electricity volume and baseline emissions are listed in following table 2.

Table 2. Baseline emissions

Period	$EG_{togrid,y}$ (MWh)	$EG_{fromgrid,y}$ (MWh)	EG_y (MWh)	$EF_{grid,CM,y}$ (tCO_2/MWh)	BE_y (tCO_2e)
01/12/2019-31/07/2020	45,800.700	86.625	45,714.075	1.05485	48,220
01/08/2020-31/12/2021	253,535.150	873.675	252,661.475	0.8405	266,513
Total in this monitoring period	368,429.700	991.650	705,496.825		744,177

The monthly data are shown in appendix 1.

5.2 Project Emissions

According to ACM0002, the emission of wind power project activity is zero, i.e. $PE_y=0$.

5.3 Leakage

No leakage emissions are considered as per the applied methodology ACM0002 version 10 and the registered PDD.

5.4 Net GHG Emission Reductions and Removals

Year	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
01/12/2019-31/12/2019	23,960	0	0	23,960
01/01/2020-31/12/2020	245,581	0	0	245,581

01/01/2021-31/12/2021	218,475	0	0	218,475
Total	488,016	0	0	488,016

Crediting Period	Baseline emissions or removals (tCO_2e)	Project emissions or removals (tCO_2e)	Leakage emissions (tCO_2e)	Net GHG emission reductions or removals (tCO_2e)
P1: 01/12/2019-31/07/2020	179,192	0	0	179,192
P2: 01/08/2020-31/12/2021	308,824	0	0	308,824
Total	488,016	0	0	488,016

For P1, the estimated annual emission reductions are 254,960 tCO_2e as per registered PD. P1 covers 244 days. The estimated emission reductions during P1 are 254,960/365×244=170,439 tCO_2e. The actual emission reductions during P1 are 179,192 tCO_2e, which are 5.14% more than the estimated value within the normal variation range.

For P2, the estimated annual emission reductions are 203,136 tCO_2e as per renewed PD. P2 covers 518 days. The estimated emission reductions during P2 are 203,136/365×518=288,286 tCO_2e. The actual emission reductions during P2 are 308,824 tCO_2e, which are 7.12% more than the estimated value within the normal variation range.

This will not influence the additionality. According to the registered PD, the IRR is 7.56% when the electricity generation increases 10%, which is still lower than the benchmark. The main reason of the increase includes, firstly, wind resource is rich, and secondly, technology and management are improved.

APPENDIX I: <MONTHLY BASELINE EMISSIONS>

Vintage	Electricity exported to Grid ($EG_{togrid,y}$) (MWh)			Electriciy imported from Grid ($EG_{fromgrid,y}$) (MWh)			Net Electricity supplied to Grid (EG_y) (MWh)	$EF_{grid,CM,y}$ (tCO_2e/MWh)	Baseline Emissions (BE_y) (tCO_2e)
	Data from meter readings (MWh)	Data on sale receipts (MWh)	Data for ER calculation (MWh)	Data from meter readings (MWh)	Data on purchase invoices (MWh)	Data for ER calculation (MWh)			
	A	**B**	**C=Min(A,B)**	**D**	**E**	**F=Max(D,E)**	**G=C-F**	**H**	**I=G×H**
01/12/2019-31/12/2019	22,753.225	22,753.225	22,753.225	38.775	38.775	38.775	22,714.450	1.05485	23,960
01/01/2020-31/01/2020	24,781.350	24,781.350	24,781.350	40.975	40.975	40.975	24,740.375	1.05485	26,097
01/02/2020-29/02/2020	21,510.225	21,510.225	21,510.225	46.750	46.750	46.750	21,463.475	1.05485	22,640
01/03/2020-31/03/2020	22,964.150	22,964.150	22,964.150	80.850	80.850	80.850	22,883.300	1.05485	24,138
01/04/2020-30/04/2020	21,239.900	21,239.900	21,239.900	97.900	97.900	97.900	21,142.000	1.05485	22,301
01/05/2020-31/05/2020	19,043.750	19,043.750	19,043.750	6.050	6.050	6.050	19,037.700	1.05485	20,081
01/06/2020-30/06/2020	19,580.100	19,580.100	19,580.100	143.275	143.275	143.275	19,436.825	1.05485	20,502
01/07/2020-31/07/2020	18,585.425	18,585.425	18,585.425	124.575	124.575	124.575	18,460.850	1.05485	19,473
P1			**170,458.125**			**579.150**	**169,878.975**		**179,192**
01/08/2020-31/08/2020	18,057.050	18,057.050	18,057.050	89.925	89.925	89.925	17,967.125	0.8405	15,101
01/09/2020-30/09/2020	20,452.300	20,452.300	20,452.300	91.575	91.575	91.575	20,360.725	0.8405	17,113
01/10/2020-31/10/2020	21,723.075	21,723.075	21,723.075	29.150	29.150	29.150	21,693.925	0.8405	18,233
01/11/2020-30/11/2020	25,571.975	25,571.975	25,571.975	42.625	42.625	42.625	25,529.350	0.8405	21,457
01/12/2020-31/12/2020	22,025.850	22,025.850	22,025.850	80.025	80.025	80.025	21,945.825	0.8405	18,445
01/01/2021-31/01/2021	24,179.650	24,179.650	24,179.650	28.600	28.600	28.600	24,151.050	0.8405	20,298
01/02/2021-28/02/2021	21,943.350	21,943.350	21,943.350	45.100	45.100	45.100	21,898.250	0.8405	18,405
01/03/2021-31/03/2021	22,361.625	22,361.625	22,361.625	10.450	10.450	10.450	22,351.175	0.8405	18,786

01/04/2021-30/04/2021	18,664.525	18,664.525	18,664.525	62.150	62.150	62.150	18,602.375	0.8405	15,635
01/05/2021-31/05/2021	18,825.950	18,825.950	18,825.950	47.575	47.575	47.575	18,778.375	0.8405	15,783
01/06/2021-30/06/2021	19,225.250	19,225.250	19,225.250	78.925	78.925	78.925	19,146.325	0.8405	16,092
01/07/2021-31/07/2021	17,982.075	17,982.075	17,982.075	67.650	67.650	67.650	17,914.425	0.8405	15,057
01/08/2021-31/08/2021	18,942.000	18,942.000	18,942.000	87.725	87.725	87.725	18,854.275	0.8405	15,847
01/09/2021-30/09/2021	22,030.250	22,030.250	22,030.250	66.000	66.000	66.000	21,964.250	0.8405	18,460
01/10/2021-31/10/2021	22,552.200	22,552.200	22,552.200	64.625	64.625	64.625	22,487.575	0.8405	18,900
01/11/2021-30/11/2021	24,018.225	24,018.225	24,018.225	54.175	54.175	54.175	23,964.050	0.8405	20,141
01/12/2021-31/12/2021	29,874.350	29,874.350	29,874.350	45.375	45.375	45.375	29,828.975	0.8405	25,071
P2			**368,429.700**			**991.650**	**367,438.050**		**308,824**
Total			**538,887.825**			**1,570.800**	**537,317.025**		**488,016**