



MONITORING REPORT

INNER MONGOLIA WUJIER PHASE I WIND POWER PROJECT

Document Prepared by

China Carbon N.V

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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

The Inner Mongolia Wujier Phase I Wind Power Project (hereafter referred to as the “Project”) developed by Inner Mongolia Xinjin Wind Power Co., Ltd. is a grid-connected renewable energy project in Ordos city, Inner Mongolia, in the People’s Republic of China.

The Project involves the installation of 33 wind turbines, each of which has a rated output of 1500kW, providing a total installed capacity of 49.5 MW, with a predicted power supplied to the grid of 126,821MWh per annum.

The purpose of the Project is to utilize a wind power facility to generate zero greenhouse gas (GHG) emissions electricity for the North China Power Grid (NCPG) thereby displacing electricity that is relatively carbon intensive. The project is therefore expected to reduce emissions of GHG by an estimated 120,508 tCO₂e per year during the first crediting period by displacing electricity from the Grid.

This project has been registered as a CDM project on 04/07/2010, and the registration number is #3387. The project has been registered as a VCS project with registration number of #1947.

This VCS monitoring period covered the time from 21/12/2019 to 03/07/2020 and the emission reductions in this monitoring period are 63,148tCO₂e.

1.2 Sectoral Scope and Project Type

This category would fall within sectoral scope 1: energy industries (Renewable sources).

Project type: wind power project.

The project is not a grouped project.

1.3 Project Proponent

Organization name	Inner Mongolia Xinjin Wind Power Co., Ltd.
Contact person	Li Qiang
Title	Director
Address	Shengli South Street, Xini Town, Hangjin County, Ordos City, Inner Mongolia, China.
Telephone	+86 134 8882 3841
Email	99824178@qq.com

1.4 Other Entities Involved in the Project

Organization name	China Carbon N.V
Role in the Project	Buyer
Contact person	Yiyu Li
Title	Manager
Address	Zuidplein 138, 1077 XV Amsterdam
Telephone	+86 13910966481
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1.5 Project Start Date

This project starts commissioning on 16/09/2010, which means the date that generates GHG emissions.

1.6 Project Crediting Period

As described in the VCS PDD, the first crediting period of the Project was '04/07/2010 to 03/07/2020', totally 10 years.

1.7 Project Location

The project is located in the Hangjin County, Ordos City, Inner Mongolia, People's Republic of China (P.R. China). The exact location of the Project center is defined using geographic coordinates obtained with a Global Positioning System (GPS) receiver: E 107°21'39" Longitude, N 40°11'40" Latitude. These geographic coordinates are for the center of the wind farm.

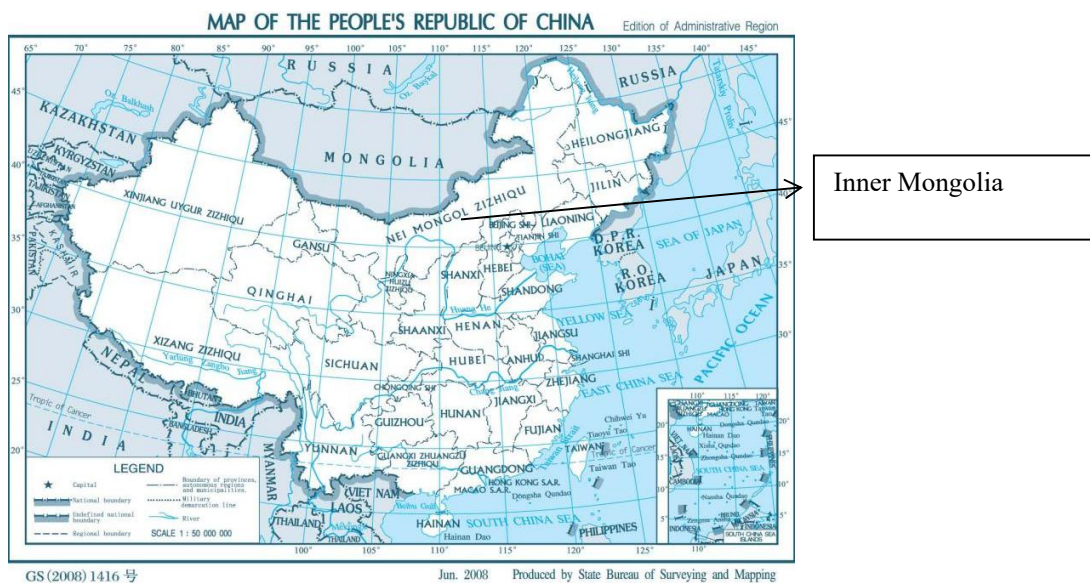


Figure 1: Map of Inner Mongolia in China



Figure 2: The project sit 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 10.

Tool for the demonstration and assessment of additionality, Version 05.2.

The approved "Tool to calculate the emission factor for an electricity system", Version 2.

For more information, please refer to:

<https://cdm.unfccc.int/methodologies/index.html>

1.9 Participation under other GHG Programs

The project has been registered as a Clean Development Mechanism (CDM) project in UNFCCC on 04/07/2010 (UNFCCC Ref. 3387), with the first 7 years crediting period started from 04/07/2010. The renewal of the crediting period for the project was approved by CDM EB on 17/12/2020, with the second 7 years crediting period from 04/07/2017 to 03/07/2024. The GHG emission reductions from 04/07/2010-20/12/2015 were applied for CDM CERs under CDM program¹. The project has been registered as a VCS project with Ref.VCS1947 on 30/10/2019. And the emission reductions from 21/12/2015 to 20/12/2019 was issued as VCU.

The issuance status is shown as below:

1 st Verification period under CDM	04/07/2010 ~ 20/11/2012	Awaiting issuance
2 nd Verification period under CDM	21/11/2012 ~ 20/01/2013	Awaiting issuance
3 rd Verification period under CDM	21/01/2013 ~ 20/12/2015	Issued
1 st Verification period under VCS	21/12/2015 to 20/12/2019	Issued

For detailed information under CDM please refer to:

<https://cdm.unfccc.int/Projects/DB/KFQ1265789122.23/view?cp=1>

1.10 Other Forms of Credit

Emission Trading Programs and Other Binding Limits

The emission reductions from 21/12/2019 to 03/07/2020 will only participate under VCS program avoid double counting, which will not be sued for compliance with emission trading to meet binding limits on GHG emissions.

Other Forms of Environmental Credit

The project hasn't sought or received another form of environmental credits.

1.11 Sustainable Development

The proposed project has contributed to sustainable development mainly by:

- Increased employment opportunities in the area where it is located - approximately 15 people were permanently employed for Project operation, and Project construction secures jobs in the construction sector.

¹ The CERs generated from 04/07/2010-20/11/2012 and 21/11/2012-20/01/2013 are awaiting issuance under CDM. The MRs have been uploaded for GSP according the CDM procedure. The issuance request will be raised in accordance with the buyer's delivery schedule. All credits from 04/07/2010-20/11/2012 and 21/11/2012-20/01/2013 will be claimed under CDM program as CERs for the project to avoid double counting.

- Enhanced the local investment environment, and therefore improves the local economy development.
- Diversified the sources of electricity generation. This is important for meeting growing energy demands and transitioning away from coal-supplied electricity generation. This contributes to one of the China's actions for promoting the sustainable developing, "By 2030, increase the share of non-fossil fuels in primary energy consumption to about 20 percent";
- Made use of renewable wind power resources reducing GHG emissions resulting from the fossil fuel fired power plants compared with a business-as-usual scenario. This contributes to one of the China's actions for promoting the sustainable developing, "By 2020, build preliminary standards and systems for green government procurement, which is environment-friendly, energy and water efficient, circular, low-carbon and renewable. "

2 SAFEGUARDS

2.1 No Net Harm

The project uses wind to generate electricity. It is environmentally friendly and there is no harm to the environment. An Environmental Impact Assessment (EIA) for the project was completed in 2008 by Inner Mongolia Institute of Electricity Power Survey and Design. The EIA was approved by Inner Mongolia Environmental Protection Bureau on 07/05/2008. A summary of the EIA is presented below.

There is no transboundary impact related to the Project, and there is no requisite resettlement or relocation of population, buildings, or public services. Therefore, social and environmental influences are considered partial, short-term, and reversible. Where impacts of the project were identified, mitigation measures were suggested and defined. The EIA highlights the following with regards to the Project, as shown in the following discussion.

Noise

The noise pollution mainly comes from the manual drills and cement mixers during the construction period, and aerodynamic interaction between the wind and turbine blades during operation. The noise levels will be naturally attenuated by ambient conditions. It is stated in the EIA that the project location is far away from the nearest resident area. Therefore, the noise of the turbines will not affect the local residents.

Solid Waste

Most of the waste produced during the construction shall be landfilled or disposed of in an appropriate solid waste disposal site. The household waste will be collected and sent to the local refuse dump.

Wastewater and sewage

The total amount of waste water and sewage from the operation of the project will be very small. The wastewater and sewage from the construction and operational periods will be treated and reused for plant irrigation, which indicates no impact on the surrounding environment.

Ecological impact

The proposed wind farm is located in an area of natural grassland. During the construction period, some vegetation will be affected, but this will be restored within a short period. The installation height of the turbines is lower than 100m, so there is not expected to be any significant effect on

birds' migration. In conclusion, the construction work of this proposed project is not expected to affect the local ecological environment.

With mitigation controls planned as part of the Project construction and EIA process, and the contribution made by the project to sustainable development for the local and national area, the Project is expected to have an overall positive impact on the local and global environments. Mitigation measures will ensure that there are no significant residual impacts associated with the Project.

2.2 Local Stakeholder Consultation

The stakeholder consultation for the Project activity took place during May 2009.

The consultation invited local stakeholders to submit comments on the Project activity by filling in a questionnaire sent out by the Project Developer. The Project Developer put the notice at the gate of the Hangjin County government office which made the local stakeholders aware that the project developer would undertake a consultation on the Proposed Project.

The notice included a technical description of the Project as well as a brief explanation of how the project activity mitigates climate change through the Clean Development Mechanism of the Kyoto Protocol, and brings other sustainable development benefits. The questionnaires were sent out around the project site. The questions asked were as follows:

- What impacts do you think the CDM Project activity will have on the local environment?
- What impacts do you think the CDM Project activity will have on employment in the local area?
- What impacts do you think the CDM Project activity will have on your livelihood?
- What impacts do you think the CDM Project activity will have on social welfare in the local area?
- What would be the overall effects of the construction and operation of the CDM Project?
- What is your attitude towards the construction of the CDM Project?

34 questionnaires were sent to the stakeholders by the Project Developer. The stakeholders are all local residents including governmental officials (4 people), local residents (27 people) and related employees (3 people).

A full list of stakeholders consulted is available from the Project Developer. Conclusion The survey received 100% participation (34 questionnaires returned out of 34). The survey shows the stakeholders believe that the proposed CDM project activity will have positive impacts on the local ecological, environmental, employment and social life. All stakeholders expressed their support for the proposed project.

During the operation of the project, the project participates welcomed any kind of stakeholders communication by means of:

- Appointed working staff take charge of the stakeholder communicating via email/phone calls that published on the company website.
- A bulletin board is placed at the project site for sharing the project operation information and also collecting feedback from the Stakeholders. This information is fed back to the project proponent by the appointed working staff for a timely response.
- The project participates organize a meeting with the local stakeholders to collect their comments and suggestions yearly. The stakeholders meeting during this monitoring period was completed on 05/06/2019 and 25/05/2020 separately.

In line with VCS requirements all the processed have been implemented by the project participate to receive comments from local stakeholders and deal with the negative concerns if any. No negative comments were received during the monitoring period.

2.3 AFOLU-Specific Safeguards

It is not applicable because this is a non-AFOLU project.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The proposed project involves the installation of 33 wind turbines each of which with a rated capacity of 1500 kW, providing a total capacity of 49.5MW. The expected annual electricity supply to the grid is 126,821 MWh.

The electricity generated will be delivered to NCPG through the Wujier step-up substation and Kubuqi 220kV substation.

Table 1: key technical specifications of the wind turbines

No	Item	Value
1	Type	Jinfeng82/1500
2	No. of vane	3
3	Rated Power (KW)	1500
4	Rotor diameter (m)	82
5	Cut in speed (m/s)	3
6	Cut out speed (m/s)	22
7	Rated speed (m/s)	10.3
8	Hub height(m)	70
9	Manufacturer	Xinjiang Goldwind Science&Technology Co.,Ltd.

The starting date of the construction was 29/05/2009. The project started commissioning on 16/09/2010.

During the monitoring period (from 21/12/2019 to 03/07/2020), the monitoring activities were conducted strictly in accordance with the monitoring plan in the registered VCS PD. The project has operated smoothly without any accidental or emergency events that might impact the accuracy and/or implementation of monitoring activities.

3.2 Deviations

3.2.1 Methodology Deviations

There is no methodology description deviation in this monitoring period.

3.2.2 Project Description Deviations

There is no project description deviation in this monitoring period. There were no project description deviations in previous monitoring reports.

3.3 Grouped Projects

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	Combined Margin Emission Factor for the NCPG
Source of data	Baseline Emission Factors for Power Grids in China, sourced from http://cdm.ccchina.gov.cn/
Value applied	0.9502
Justification of choice of data or description of measurement methods and procedures applied	Data or description of measurement methods and procedures applied was sourced from China DNA, which was calculated according to the updated Baseline Emission Factors for Power Grids in China based on ACM0002 and EB guidance
Purpose of Data	Baseline emission calculations.
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

Data / Parameter	$EG_{facility,y}$
Data unit	MWh/yr

Description	Quantity of net electricity generation supplied by the project to the grid in year y																			
Source of data	Electricity Meter																			
Description of measurement methods and procedures to be applied	It is calculated as the difference between electricity exported to the grid and electricity imported from the grid, which are continuously measured and recorded monthly. The main meter installed at the high voltage side of the on-site transformer is used to obtain the amount of electricity effectively supplied to the Grid and the amount of imported electricity from the Grid. A check meter installed at the high voltage side of the on-site transformer can be used to obtain the amount of electricity effectively supplied to the Grid and the amount of imported electricity from the Grid in case the key meter is malfunction. The meter recording value should be cross checked with the Electricity Transaction Notes (ETNs) issued by Grid Company. And the conservativeness value is used for ER calculation. $EG_{facility,y}=EG_{export,y}-EG_{import,y}$																			
Frequency of monitoring/recording	Measuring continuously/Reading monthly/Recording monthly																			
Value monitored	66,458																			
Monitoring equipment	The exported and imported electricity are monitored by a two-way power meter at the wind company. A check meter is installed at the side of substation to monitor the electricity for sales receipt. The detail information of the power meters is shown in following table.																			
QA/QC procedures to be applied	The electricity meter is calibrated and checked for accuracy periodically (once a year) according to the industry standards so that the metering equipment have sufficient accuracy. <table><tr><td>Type</td><td>Serial No.</td><td>Calibration</td><td>Valid</td><td>Accuracy</td></tr><tr><td rowspan="2">DSSD1169</td><td rowspan="2">97668449 (Main Meter)</td><td>14/08/2019</td><td>13/08/2020</td><td rowspan="2">0.2S</td></tr><tr><td>13/05/2020</td><td>12/05/2021</td></tr><tr><td rowspan="2">DSSD1169</td><td rowspan="2">97668445 (Check Meter)</td><td>14/08/2019</td><td>13/08/2020</td><td rowspan="2">0.2S</td></tr><tr><td>13/05/2020</td><td>12/05/2021</td></tr></table>	Type	Serial No.	Calibration	Valid	Accuracy	DSSD1169	97668449 (Main Meter)	14/08/2019	13/08/2020	0.2S	13/05/2020	12/05/2021	DSSD1169	97668445 (Check Meter)	14/08/2019	13/08/2020	0.2S	13/05/2020	12/05/2021
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		13/05/2020	12/05/2021																	
DSSD1169	97668445 (Check Meter)	14/08/2019	13/08/2020	0.2S																
		13/05/2020	12/05/2021																	
Purpose of the data	Baseline emission calculations.																			
Calculation method	It is the difference between the monitored electricity exported to the Grid and monitored electricity imported from the Grid																			
Comments	/																			

4.3 Monitoring Plan

1. Monitoring system organization

Roles and responsibilities will be defined for relevant staff involved in project monitoring, and the prospect of nominating a project Manager will be considered. If appointed, the project Manager will have the overall responsibility for the monitoring system on this project. All staff involved in the collection of data and records will be coordinated by him.

2. Staff training

Training is conducted on-site to ensure that staffs are capable of performing their designated tasks to high standards. This includes CDM & VCS specific training to warrant that they understand the importance of complete and accurate data and records for CDM & VCS monitoring.

3. Maintenance and calibration of monitoring equipment

The electricity meter(s) measuring power output to the grid will be calibrated in line with the relevant and applicable standard. This will ensure that the accuracy of the meters will be within $\pm 0.5\%$.

4. Data collection and record-keeping arrangements

The main meter installed at the high voltage side of the on-site transformer is used to obtain the amount of electricity effectively supplied to the Grid and the amount of imported electricity from the Grid. $EG_{facility,y}$ is calculated by the electricity effectively supplied to the Grid minus the imported electricity from the Grid. In addition, a check meter installed at the high voltage side of the on-site transformer can be used to obtain the amount of electricity effectively supplied to the Grid and the amount of imported electricity from the Grid in case the key meter is malfunction.

The meter recording value should be cross checked with the ETN issued by Grid Company. The monitoring system is as following:

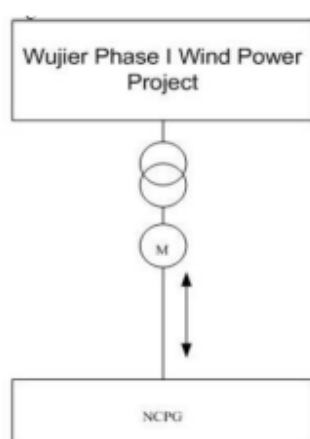


Figure 3: The monitoring system

All relevant data will be measured and collected. All data required for verification and issuance will be backed-up and retained for at least two years after the end of the crediting

period or the last issuance of VCU of the VCS Project, whichever occurs later. Data collected on-site will be compiled in an electronic format which will be sent to the buyer.

5. Data Quality Control and Quality Assurance

All data collected on-site will be checked internally. The electricity meter is calibrated according to national standard.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

Quantify the baseline emissions and/or removals, providing sufficient information to allow the reader to reproduce the calculation. Attach electronic spreadsheets as an appendix or separate file to facilitate the verification of the results.

According to ACM0002 and the registered VCS PD of the Project, the baseline emission BE_y during the monitoring period results from:

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

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

Where:

BE_y is the baseline emissions of the Project;

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

$EG_{facility,y}$ is Quantity of net electricity generation supplied the project to the grid in year y;

$EG_{export,y}$ is the quantity of electricity exported to the grid by the Project; $EG_{import,y}$ is the quantity of electricity imported from the grid by the Project. The monthly electricity data (The cut-off time is 24:00 on 20th of each month) is listed in following table 1:

Table1. Calculation of the net electricity supplied to the grid by the Project

Vintage	$EG_{facility,y}$ (MWh)	EF_y (tCO ₂ e/MWh)	BE_y (tCO ₂)
21/12/2019~20/01/2020	8,314	0.9502	7,900
21/01/2020~20/02/2020	15,312	0.9502	14,549

21/02/2020~20/03/2020	11,576	0.9502	10,999
21/03/2020~20/04/2020	7,723	0.9502	7,339
21/04/2020~20/05/2020	12,017	0.9502	11,418
21/05/2020~20/06/2020	11,516	0.9502	10,943
21/06/2020~03/07/2020 ²	0	-	0
Total	66,458	0.9502	63,148

5.2 Project Emissions

Project emission (PEy) is 0 tCO₂e as per the registered VCS PD.

5.3 Leakage

No leakage emissions are considered as per the applied methodology ACM0002 and the registered VCS PD.

5.4 Net GHG Emission Reductions and Removals

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)
21/12/2019~20/01/2020	7,900	0	0	7,900
21/01/2020~20/02/2020	14,549	0	0	14,549
21/02/2020~20/03/2020	10,999	0	0	10,999
21/03/2020~20/04/2020	7,339	0	0	7,339
21/04/2020~20/05/2020	11,418	0	0	11,418

² The project was operated normally during this monitoring period, no stop or maintenance happened. Based on a monthly based reading records, there was no daily reading records for the specific dates i.e 03/07/2020. The project participate decided to claim zero carbon credits for 21/06/2020~03/07/2020 for a conservative.

21/05/2020~20/06/2020	10,943	0	0	10,943
21/06/2020~03/07/2020	0	0	0	0
Total	63,148	0	0	63,148

The estimated annual emission reductions are 120,508tCO₂e as per VCS PD. The monitoring period covers 196 days. The ex-ante emission reductions during this monitoring period are $120,508/365 \times 196 = 64,711\text{tCO}_2\text{e}$. The actual emission reductions in this period are 63,148tCO₂e, which are 2.4% less than the estimated value. And, the actual emission reductions are 4.5% higher than the estimated value if excluding the 13 days (21/06/2020~03/07/2020) ($120,508/365 \times 183 = 60,419\text{tCO}_2\text{e}$), which is still below the variation of 16.65% for reaching the benchmark as stated in the registered VCS PD, thus would not influence the additionality of the project.