



MONITORING REPORT

INNER MONGOLIA YIHEWUSU PHASE II 49.5 MW 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 project activity is a wind farm project located at Hangjin County, Ordos City, Inner Mongolia, People's Republic of China which is to use wind resource for electricity generation. The installed capacity of the project activity is 49.5 MW, consisting of 66 sets of wind turbines with unit capacity of 750 kW. The average annual power delivered to the grid by the project is expected to be 101,689 MWh.

The Project can reduce GHG emissions by replacing the electricity generated by fossil fuel fired power plants North China Power Grid (NCPG). It's estimated that the proposed project could achieve GHG emission reductions of 84,086 tCO₂e annually. The baseline scenario is the same as the scenario existing prior to the start of the implementation of the project activity: electricity delivered to the Grid by the project would have otherwise been generated by the operation of grid-connected power plants and by the addition of new generation sources.

The project start construction start on 15/09/2008, and operation start on 25/06/2009. The project was registered as a CDM project (No. 3490) on 25/11/2010; and was registered as a VCS project (No. 1001).

During this monitoring period (from 25/06/2019 to 24/04/2021), the monitoring activities were conducted strictly in accordance with the monitoring plan in the registered VCS PD. The project has operated without any accidental or emergency events that might impact the accuracy and/or implementation of monitoring activities. The net feed-in electricity during this period is 177,279 MWh, and the emission reduction achieved by the project in this monitoring period is 146,592 tCO₂e. The emission reductions in the monitoring period will be verified and issued under VCS rules.

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

Provide contact information for the project proponent(s). Copy and paste the table as needed.

Organization name	Inner Mongolia Xinjin Wind Power Co., Ltd.
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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

Provide contact information and roles/responsibilities for any other project participant(s). Copy and paste the table as needed.

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
Email	liyiyu@chinacarbonfund.com

1.5 Project Start Date

The project started operation on 25/06/2009.

1.6 Project Crediting Period

As described in the registered PD, the first crediting period of the Project was '25/06/2009 to 24/06/2019', totally 10 years; the second credit period was set as '25/06/2019 to 24/06/2029' totally 10 years.

And in the Monitoring Report, the monitoring period is from 25/06/2019 to 24/04/2021.

1.7 Project Location

The project was located in Ordos city, Inner Mongolia, in the People's Republic of China. The exact location of the Project is defined using geographic coordinates obtained with a Global Positioning

System (GPS) receiver: E 107°31'42" Longitude, N 40°07'02" Latitude. These geographic coordinates are for the center of the wind farm.

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 20, in effect as of EB47;

The approved “Tool to calculate the emission factor for an electricity system”, Version 7, in effect as of EB 100 are applied to the Project activity.

1.9 Participation under other GHG Programs

The proposed project was registered as a CDM project activity on 25/11/2010, and the first crediting period is from 25/11/2010 to 24/11/2017.

Monitoring period	Program	Status	Note
25/2010~ 20/11/2012	CDM	Awaiting issuance request	The project was registered under both CDM and VCS Ver.3.3, however, such requirement has not shown in VCS Ver.3.3 to keep the monitoring periods be contiguous with no time gaps. The monitoring periods have been listed contiguously in both systems. Therefore, it's reasonable to claim the ER issuance under CDM for the monitoring period mentioned above, which is accepted by VCS V3.3. Furthermore, an exemption was submitted from the VCS Standard version 4.1 to comply with the Section 3.4.4 of the VCS Standard. In addition, A Project proponents' statement was provided in which clarified that no credits will be claimed for the same GHG emission reduction or removal under the VCS Program and another GHG program.
21/2012~ 20/01/2013	CDM		
21/01/2013- 20/12/2015	CDM	Issued	-
21/12/2015- 24/06/2019	VCS	Issued	-

The project has not participated in any other GHG programs.

1.10 Other Forms of Credit

The project has not applied any other forms of credits.

1.11 Sustainable Development

The proposed project will contribute to sustainable development mainly by:

- Increases employment opportunities in the area where it is located - approximately 15 people will be permanently employed for Project operation, and Project construction secures jobs in the construction sector. The Project therefore contributes to poverty alleviation
- Enhances the local investment environment, and therefore improves the local economy
- Diversifies the sources of electricity generation. This is important for meeting growing energy demands, and transitioning away from coal-supplied electricity generation
- Makes use of renewable wind power resources

2 SAFEGUARDS

2.1 No Net Harm

Summarize any potential negative environmental and socio-economic impacts and the steps taken to mitigate them.

According to Clauses 13 and 19 of the Environmental Evaluation Law of the Host Country, the Project entity must analyse the environmental impacts of project activities in the Host Country before utilising natural resources and beginning Project construction. The Project Developer therefore commissioned a third party, the Inner Mongolia Institute of Electricity Power Survey and Design, to conduct the required Environmental Impact Assessment (EIA) in 2008, and the EIA report was approved by the Inner Mongolia Environmental Protection Bureau on 07/05/2008.

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, and will remain within the 'Standards of Environmental noise of urban areas' (GB3096-93). 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 waste treatment station or refuse dump.

Electromagnetic impact: The operation of the wind farm will generate electromagnetic energy, however, the amount produced will be very small. Furthermore, the site of the Project is far from any residential area. Therefore, there is no significant electromagnetic impact to be expected.

Wastewater and sewage: The total amount of wastewater 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.

Dust and Air Quality: The air impact during the construction period mainly comes from airborne dust produced by excavating, by land transportation vehicles, and some exhaust discharge from using and moving construction machinery. Regarding this problem, the project owner will use enclosed or semi-enclosed transportation the construction controls, advocating 'civilized construction', and regularly spaying and cleaning the branch roads, material dump sites and other construction work surfaces.

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.

Given the environment of the project location, there is very little wildlife at the site, and no protected species has been detected. Therefore, there is no significant impact by the Project on the local ecology.

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

Local Stakeholder Consultation during the project preparation stage:

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. 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?

31 questionnaires were sent to the stakeholders by the Project Developer. The stakeholders are all local residents including governmental officials (2 people), local residents (26 people) and related employees (3 people). A full list of stakeholders consulted is available from the Project Developer.

Local Stakeholder Consultation during the project implementation stage:

There is a Notebook provided near the notice board of the local village. All the local stakeholders can write their comments, suggestions, or complains in the Notebook anytime during the lifetime of the project. The project owner will check the book every month. There are no negative comments received for the project. In line with VCS requirements all the processes have been implemented to receive comments from local stakeholders as well as communicate with them at periodic intervals.

2.3 AFOLU-Specific Safeguards

The project is not a AFOLU-Specific project

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

During the monitoring period (from 25/06/2019 to 24/04/2021), 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 deviation in this monitoring period

3.2.2 Project Description Deviations

There is no project description deviation in this monitoring period.

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

Data / Parameter	EF_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://mee.gov.cn/
Value applied	0.8269
Justification of choice of data or description of measurement methods and procedures applied	Data or description of measurement methods and procedures applied 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	Both the electricity exported to the grid by the proposed project and the power imported from the grid will be monitored continuously through the two-way metering equipment (Key meter) at the onsite substation.

Frequency of monitoring/recording	Measuring continuously/Reading monthly/Recording monthly
Value monitored	177,279 MWh.
Monitoring equipment	The monitoring meter is the key Meter, and a check meter is installed in case the key meter is malfunctioned. During this monitoring period, the key meter has operated normally. The information about the meters: Type Bidirectional electricity meter Accuracy class 0.2S Serial number 94349628 Date of calibration on 08/03/2019, 17/10/2019, 13/05/2020, 18/11/2020; Calibration validity until 17/11/2021. Calibration frequency Once per year Calibration entity Electric energy Measuring and Testing center of Inner Mongolia Electric Power Science Research
QA/QC procedures to be applied	Cross check measurement results with sales receipts. A check meter (S/N: 94349626) Date of calibration on 08/03/2019, 17/10/2019, 13/05/2020, 18/11/2020; Calibration validity until 17/11/2021. which has been calibrated was installed in case the key meter is malfunctioned
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	Provide any additional comments

4.3 Monitoring Plan

Describe the process and schedule followed for monitoring the data and parameters, set out in Section 3.2 (Data and Parameters Monitored) above, during this monitoring period, include details on the following:

The organizational structure, responsibilities and competencies of the personnel that carried out the monitoring activities.

The methods used for generating/measuring, recording, storing, aggregating, collating and reporting the data on monitored parameters.

The procedures used for handling any internal auditing performed and any non-conformities identified.

The implementation of sampling approaches, including target precision levels, sample sizes, sample site locations, stratification, frequency of measurement and QA/QC procedures. Where applicable, demonstrate whether the required confidence level or precision has been met.

Where appropriate, include line diagrams to display the GHG data collection and management system.

This section details the steps taken to monitor the GHG emissions reductions on a regular basis from the Inner Mongolia Yihewusu Phase II 49.5 MW Wind Power Project in the Host Country.

The monitoring set-up for this Project has been developed to ensure that from the start, the Project is well organised in terms of the collection and archiving of complete and reliable data.

1. CDM monitoring Organisation Roles and responsibilities will be defined for relevant staff involved in CDM monitoring, and the prospect of nominating a CDM Manager will be considered. If appointed, the CDM 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 will include CDM specific training to warrant that they understand the importance of complete and accurate data and records for CDM 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 national standard. The meter(s) measuring electricity supply will maintain accuracy within 0.5%.

4. Data collection and record-keeping arrangements The 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. The electricity generated and consumed by the facility is collected and recorded at 24:00 on the 20th every month, meanwhile the net electricity exported onto the net is calculated automatically by the computer, this method of calculation is accepted by the Inner Mongolia Power (Group) Co., Ltd.

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

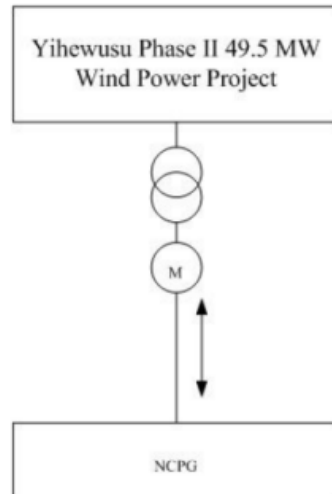


Figure 1. Line diagram

5. Data Quality Control and Quality Assurance All data collected on-site will be checked internally before being compiled in an electronic format, to ensure that it is complete and of appropriate quality. The responsible company or person will perform a final check of the data, and analyse project performance prior to any verification.

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 BEy during the monitoring period results from: $BE_y = EG_{facility,y} \times EF_y$ $EG_{facility,y} = EG_{export,y} - EG_{import,y}$ Where: BEy is the baseline emissions of the Project; EFy is the combined margin baseline emission factor of the NCPG; $EG_{facility,y}$ is Quantity of net electricity generation supplied by 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 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)	BEy (tCO ₂)
25/06/2019-24/12/2019	41,943	0.8269	34,683
2020	92,843	0.8269	76,772
25/12/2020-24/04/2021	42,493	0.8269	35,138
Total	177,279		146,592

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

Quantify the net GHG emission reductions and removals, summarizing the key results using the table below. Specify breakdown of GHG emission reductions and removals by vintages where the intent is to issue each vintage separately in the VCS registry system.

For non-AFOLU projects, use the following table:

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)
25/06/2019-24/12/2019	34,683	0	0	34,683
2020	76,772	0	0	76,772
25/12/2020-24/04/2021	35,138	0	0	35,138
Total	146,592	0	0	146,592

The estimated annual emission reductions are 85,459 tCO₂e as per the PDD. The monitoring period covers 670 days. The estimated emission reductions during this monitoring period are $84,086/365 \times 670 = 154,350$ tCO₂e. The actual emission reductions in this period are, 146,592 tCO₂e, which are 5.0% lower than the estimated value within the normal variation range.