



**Verified Carbon
Standard**

GANSU GUAZHOU DALIANGXI WIND POWER PROJECT

Document Prepared by

CGN Carbon Asset Management (Beijing) Co., Ltd

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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

Gansu Guazhou Daliangxi Wind Power Project (the project) is located at Guazhou County, Jiuquan City, Gansu Province, People's Republic of China. The project involves the installation of 33 wind turbines with each capacity of 1,500 kW, and totals up an installation capacity of 49.5MW. The Project is to utilize a wind power facility to generate zero greenhouse gas (GHG) emissions electricity for the Northwest China Power Grid. The Northwest China Power Grid is a coal-dominated power grid. The project is expected to generate approximately 115,144MWh per year and reduce emissions of GHG by an estimated 88,361 tCO₂e per year during the first crediting period by displacing electricity from the Grid.

The project started construction on 31/05/2008. The first wind turbine of the project has been put into operation on 04/12/2008. And the project was put into full delivery on 14/01/2009. The expected operation period of the project is 20 years as stated in the registered PDD. The first renewable crediting period of the Project under VCS is updated from 01/01/2009-03/05/2010 to 01/01/2009-31/12/2018. The second crediting period of the Project under VCS is 01/01/2019-31/12/2028.

The project activity was registered as a CDM project activity on 04/05/2010 and renewed on 21/03/2019 (Ref. 2916). After the registration of CDM, the project has been registered as a VCS project (Ref. 544). Total GHG emission reduction of 101,809 tCO₂e generated from 04/05/2010 to 29/03/2011 (both days included) by the project has been issued as CER under CDM program. Total GHG emission reduction of 92,556 tCO₂e generated from 30/03/2011 to 29/03/2012 (both days included) by the project has been issued as CER under CDM program. Total GHG emission reduction of 55,291 tCO₂e generated from 30/03/2012 to 28/09/2012 (both days included) by the project has been issued as CER under CDM program. Total GHG emission reduction of 429,582 tCO₂e generated from 29/09/2012 to 28/09/2018 by the project has been issued as VCUs under VCS program. Total GHG emission reductions of 17,044 tCO₂e of VCUs for the monitoring period from 29/09/2018 to 31/12/2018 are under issuance process.

During this monitoring period from 01/01/2019 to 31/12/2021, the total emission reduction achieved is 206,270 tCO₂e.

1.2 Sectoral Scope and Project Type

Sectoral scope: 1. Energy industries (renewable/non-renewable sources);

Project type: Wind farm project

The project is not a grouped project.

1.3 Project Proponent

Organization name	<i>Gansu CGN Wind Power Co., Ltd.</i>
Contact person	<i>Lei Shi</i>
Title	<i>Vice General Manager</i>
Address	<i>No.2 Building, Area 12 of Advanced Business Park, No. 188 west of South 4th Ring Road, Beijing, P. R. China</i>
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1.4 Other Entities Involved in the Project

Organization name	<i>CGN Carbon Asset Management (Beijing) Co., Ltd</i>
Role in the Project	<i>Consultancy</i>
Contact person	<i>Tan Shishi</i>
Title	<i>Project Manager</i>
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1.5 Project Start Date

The project started on 04/12/2008 (operation start date)

1.6 Project Crediting Period

In the registered VCS PD, the crediting period is described as from 01/01/2009 to 03/05/2010. A deviation is requested for the crediting period in the registered VCS PD. The project is registered before 19/03/2020, thus, it remains eligible to apply the crediting period requirements under VCS Version 3 which shall be a maximum of ten years and may be renewed at most twice, so the first renewable crediting period of the project should be updated from “01/01/2009-03/05/2010” to “01/01/2009-31/12/2018”. Moreover, as the project is also

registered as a CDM project with a seven year twice renewable project crediting period and furthermore, the project has the lifetime of 20 years, it is not eligible for VCU issuance beyond 31/12/2028.

This is the second crediting period of the Project under VCS which starts from 01/01/2019 to 31/12/2028.

1.7 Project Location

The project is located at Guazhou County, Jiuquan City, Gansu Province, and 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 95° 36'37" Longitude, N 40° 42'55" Latitude. These geographic coordinates are for the centre of the wind farm.

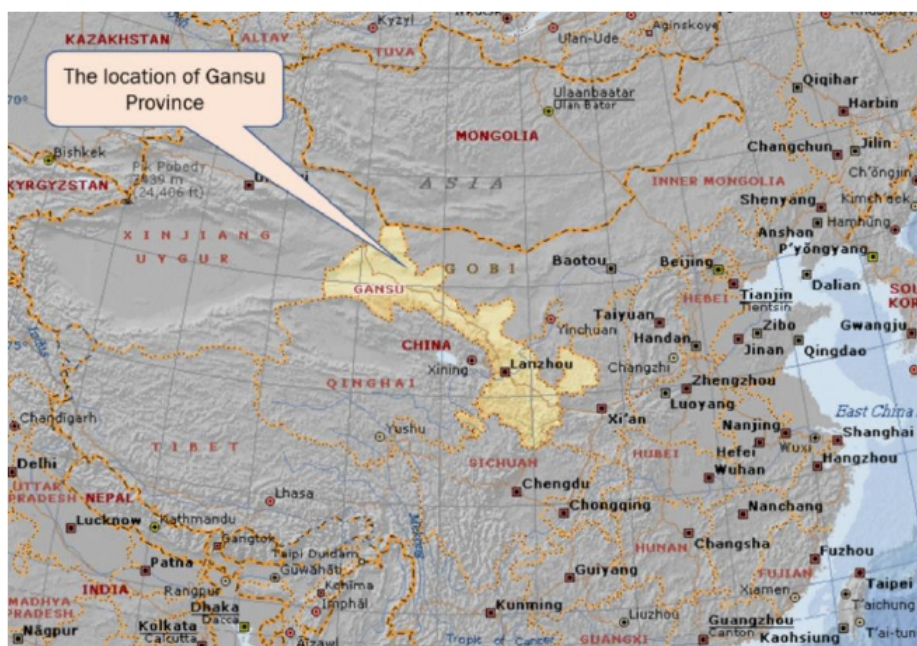


Figure 1. The location of Gansu Province in P. R. China

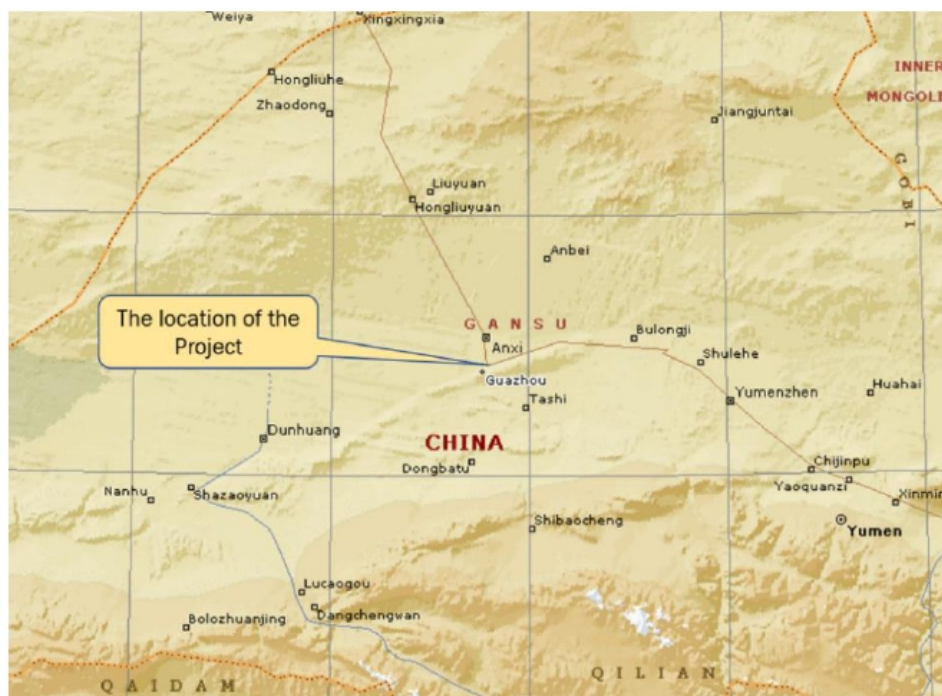


Figure 2. The location of the project

1.8 Title and Reference of Methodology

The methodology applied to the project is as follows:

Methodology:

ACM0002: "Grid-connected electricity generation from renewable sources" (Version 20.0)

Reference:

<https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG>

Tools:

"Tool for assessment of the validity of the original/current baseline and update of the baseline at the renewal of the crediting period" (Version 03.0.1)

Reference:

<https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-11-v3.0.1.pdf>

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

Reference:

<https://cdm.unfccc.int/methodologies/PAMethodologies/tools/am-tool-07-v7.0.pdf>

1.9 Participation under other GHG Programs

The project has been registered as CDM project and the registration number is 2916, the first CDM crediting period is from 04/05/2010 to 03/05/2017 (renewable), and the crediting period has been successfully renewed on 21/03/2019 with the 2nd CDM crediting period from 04/05/2017 to 03/05/2024. Total GHG emission reductions of 249,656 tCO₂ generated from 04/05/2010 to 28/09/2012 (both days included) by the project has been issued as CER under CDM program (As shown in the following table) .

Period	emission reductions(tCO ₂ e)
04/05/2010 to 29/03/2011	101,809
30/03/2011 to 29/03/2012	92,556
30/03/2012 to 28/09/2012	55,291
Total	249,656

Please refer to the following link for details:

<https://cdm.unfccc.int/Projects/DB/BVQI1250066972.19/view?cp=1>

1.10 Other Forms of Credit

Emission Trading Programs and Other Binding Limits

Total GHG emission reductions of 114,633 tCO₂e of VCUs have been issued for the monitoring period from 01/01/2009 to 03/05/2010.

Total GHG emission reduction of 429,582 tCO₂e generated from 29/09/2012 to 28/09/2018 by the project has been issued as VCUs under VCS program.

Total GHG emission reductions of 17,044 tCO₂e of VCUs for the monitoring period from 29/09/2018 to 31/12/2018 are under issuance process.

All credits from 01/01/2019 to 31/12/2021 will be claimed under VCS program as VCUs for the project to avoid double counting, which will not be used for compliance with emission trading programs or 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 Contributions

The proposed project activity will achieve obvious GHG emission reductions by avoiding CO₂ emissions, as grid-connected fossil fuel-fired power dominates in the NWPG, and contribute to the China's commitment to peak carbon dioxide emissions before 2030. Meanwhile, during the

construction and operation period, the project could also provide some employment opportunities to the local residents and enhance the local economic development.

Table 1: Sustainable Development Contributions

Row number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime
1)	13.0	Tonnes of greenhouse gas emissions avoided or removed	Implemented activities to increase	The project involves the installation of 33 wind turbines with each capacity of 1,500 kW, and totals up an installation capacity of 49.5MW. The project is expected to reduce emissions of GHG by an estimated 88,361 tCO ₂ e per year during the second crediting period.	Reducing the GHG emissions of 88,361 tCO ₂ e annually and 883,610 tCO ₂ e totally during the second crediting period of the project, which is from 01/01/2019-31/12/2028.

2 SAFEGUARDS

2.1 No Net Harm

The project doesn't cause significant impact on the environment and socio-economic as to the conclusion of the EIA. The conclusions of EIA are documented below:

Noise

The noise pollution mainly comes from the manual drills, cement mixers during 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'. 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 transported to municipal landfill plant or 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 the residential area. Therefore, there is no significant electromagnetic impact to be expected.

Wastewater and sewage

The total amount of waste water and sewage from the operation of the project will be very small. Before wastewater and sewage from the construction and operational periods are discharged, they will be processed by using a sedimentation pond and septic tank in order to reach class one of the Chinese environmental standards, 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 vehicles to reduce dust, with strictly managed schedules and routes. Dust will also be mitigated by strengthening 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. The space between the turbines is 200m-300m, which will therefore not significantly affect bird flight. Meanwhile, the arrangement of rotors and transmission lines, and the design of the blades' shape, colour, quantity and size has also been considered to match as far as possible the surrounding natural landscape and the local construction style. 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.

2.2 Local Stakeholder Consultation

Local stakeholders Consultation during the project preparation stage:

The stakeholder consultation for the Project activity took place in May 2008. The local stakeholders (i.e. government officers, local residents) were invited to submit comments on the Project activity by filling in a questionnaire sent out by the Project Developer. A notice about the same and also the questionnaires were put at the project management office around the project site.

The questionnaires included a technical description of the Project as well as a brief explanation of how the project activity mitigates climate change taking support of Kyoto Protocol's Clean Development Mechanism (CDM) Incentives, and brings other sustainable development benefits. The questions asked were as follows:

- What impacts do you think the CDM Project activity will have on the local ecological 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 local economic development?
- 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?

Twenty nine such questionnaires were sent to the stakeholders by the Project Developer. The stakeholders were all local residents. A full list of stakeholders consulted is available with the Project Developer.

Questionnaires result summary is as follow:

Item	Content	%
What impacts do you think the CDM project activity will have on the local ecological environment?	Positive impact	52%
	Negative impact	0%
	No impact	48%
	Both positive and negative impacts	0%
What impacts do you think the CDM project activity will have on employment in the local area?	Positive impact	83%
	Negative impact	0%
	No impact	17%
	Both positive and negative impacts	0%
What impacts do you think the CDM project activity will have on your livelihood?	Positive impact	76%
	Negative impact	0%
	No impact	24%
	Both positive and negative impacts	0%
What impacts do you think the CDM project activity will have on local economic development?	Positive impact	90%
	Negative impact	0%
	No impact	10%
	Both positive and negative impacts	0%
What would be the overall effects of the construction and operation of the CDM project activity?	Positive effect	90%
	Negative effect	0%
	No effect	10%

What is your attitude towards the construction of the CDM project activity?	Agree	100%
	Do not agree	0%

The survey received 97% participation (28 questionnaires returned out of 29). 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. A full list of the filled-in questionnaires is available from the project developer.

Local stakeholder Consultation during the project implementation stage:

The project owner has set out the mechanism for on-going communication with local stakeholders and the communications with local stakeholders are being carried out at periodic intervals.

Firstly, stakeholders were informed of the status and progress of the project through the bulletin board on the village committee, and their comments can be recorded in the village committee's complaint book. This information is fed back to the project proponent by the contact person for a timely response.

Secondly, stakeholders can communicate and give feedback directly to the project proponent at any time through the published phone number of contact person.

Finally, the contract person of project owner also meets local villagers to collect their comments and suggestions yearly.

During this monitoring period, the project carried out the communication with local stakeholders in line with the mechanism. Village committee's complaint book were quarterly checked by the contact person, and the contact person visited the villages in Sep 2012, Aug 2013, May 2014, May 2015, Jun 2016, Jun 2017, Jun 2018 and May 2019 to communicate with stakeholders. Meanwhile, the local authority has also conducted spot checks on the implementation of the project yearly. There are no negative comments received for the project during this monitoring period. In line with VCS requirements all the processed have been implemented to receive comments from local stakeholders as well as communicate with them.

2.3 AFOLU-Specific Safeguards

NA

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project involves the installation of 33 turbines, each of which has a capacity of 1500kW and total installed capacity of 49.5MW. During the monitoring period, all turbines have come into operation and supplied electricity to Northwest China Power Grid. Please refer to Figure 3 for the technology process of the project and Table 2 for key technical characteristics of the generating equipments of the project.

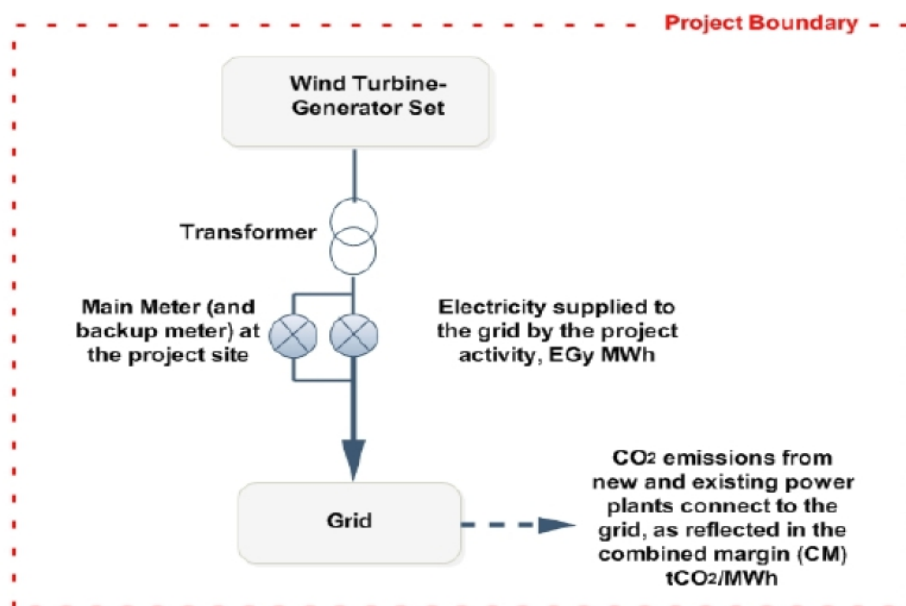


Figure 3 Technology process of the project

Wind Turbines	
Type	FD77A
No. of vane	3
Rated Power (kW)	1500
Rotor diameter (m)	77
Manufacturer	Dongfang Steam Turbine Works

Table 2 Technical Characteristics of the generating equipments

The electricity generated from the Project is delivered to Northwest China Power Grid. During this monitoring period, there was no significant malfunction or any emergency occurred for the Project during this monitoring period. No events occurred during this monitoring period which may impact the applicability of the methodology.

3.2 Deviations

2.1.1 Methodology Deviations

There are no deviations applied to this monitoring period.

2.1.2 Project Description Deviations

In the registered VCS PD, the crediting period is described as from 01/01/2009 to 03/05/2010. A deviation is requested for the crediting period in the registered VCS PD. The project is registered before 19/03/2020, thus, it remains eligible to apply the crediting period requirements under VCS Version 3 which shall be a maximum of ten years and may be renewed at most twice, so the first renewable crediting period of the project should be updated from “01/01/2009-03/05/2010” to “01/01/2009-31/12/2018”, and it has no impacts on the applicability, additionality or baseline of the project. There are no other project description deviations during this monitoring period.

This is the second crediting period of the Project under VCS which starts from 01/01/2019 to 31/12/2028.

3.3 Grouped Projects

The Project is not a grouped project.

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

The baseline grid emission factor $EF_{grid,CM,y}$ is obtained directly from the official source Notification on Determining Baseline Emission Factor of China’s Grid by China’s DNA. Thus, the relevant basis parameters for calculation of $EF_{grid,CM,y}$ are not described in detail here. With consideration of the fact of the Project, data and parameters that are available at validation are summarized in below tables.

Data / Parameter	$EF_{grid,CM,y}$
Data unit	tCO ₂ e/MWh
Description	The Baseline emission factor of Northwest China Power Grid
Source of data	Registered CDM PDD
Value applied	0.7674
Justification of choice of data or description of measurement methods and procedures applied	The data source is from public data of China DNA.
Purpose of Data	Baseline emission calculations
Comments	The baseline emission factor was determined ex ante and will be used throughout the first crediting period.

4.2 Data and Parameters Monitored

Data / Parameter	EG _{facility,y}											
Data unit	MWh											
Description	Net electricity supplied to the grid by the project.											
Source of data	Measured by the main meter installed at the output of the project site											
Description of measurement methods and procedures to be applied	Measured											
Frequency of monitoring/recording	Continuously measured, and monthly recorded											
Value monitored	<table><tr><th>Year</th><th>Value</th></tr><tr><td>Year 2019</td><td>94352.544</td></tr><tr><td>Year 2020</td><td>94191.438</td></tr><tr><td>Year 2021</td><td>80247.816</td></tr><tr><td>Total</td><td>268791.798</td></tr></table>		Year	Value	Year 2019	94352.544	Year 2020	94191.438	Year 2021	80247.816	Total	268791.798
Year	Value											
Year 2019	94352.544											
Year 2020	94191.438											
Year 2021	80247.816											
Total	268791.798											
Monitoring equipment	Main meter installed at the output of the project site											
	Type	SL7000										
	Accuracy class	0.2S										
	Serial Number	36032119										
	Calibration frequency	Annually										
	Backup meter installed at the output of the project site											
	Type	SL7000										
	Accuracy class	0.2S										
	Serial Number	36056210										
	Calibration frequency	Annually										
	The meters above were replaced on 16/04/2020, and the detailed information of newly replaced meters is shown as follow:											
	Main meter installed at the output of the project site											
	Type	MK6E										
	Accuracy class	0.2S										
Serial Number	0123716200											
Calibration frequency	Annually											

	<table border="1"> <tr> <td colspan="2">Backup meter installed at the output of the project site</td></tr> <tr> <td>Type</td><td>MK6E</td></tr> <tr> <td>Accuracy class</td><td>0.2S</td></tr> <tr> <td>Serial Number</td><td>0123716172</td></tr> <tr> <td>Calibration frequency</td><td>Annually</td></tr> </table> The calibrations of main/backup meters are carried out annually by Power Measurement Center of Gansu Province Power Company. The Power Measurement Center is the qualified authority for the meters calibration accredited by Gansu Province Quality and Technology Supervision Bureau.	Backup meter installed at the output of the project site		Type	MK6E	Accuracy class	0.2S	Serial Number	0123716172	Calibration frequency	Annually
Backup meter installed at the output of the project site											
Type	MK6E										
Accuracy class	0.2S										
Serial Number	0123716172										
Calibration frequency	Annually										
QA/QC procedures to be applied	Meters will be calibrated according to the relevant national standard. Data measured by the meters will be cross checked using electricity sales receipts. The accuracy of the measurement is ensured through calibration by a qualified party. Data will be archived at least for two years after the end of the crediting period, or the last issuance of VCUs, whichever is later.										
Purpose of the data	Baseline emission calculations										
Calculation method	$EG_{\text{facility},y}$ is calculated by the electricity exported to the grid (EG_{export}) minus the electricity imported from the grid (EG_{import}). $EG_{\text{facility},y} = EG_{\text{export}} - EG_{\text{import}}$										
Comments	-										

The detailed information of the calibration is shown as follows:

Meters	Accuacy Class	Serial Number	Calibration Frequency	Date of Calibration	Validity
Main meter	0.2S	36032119	Annually	08/01/2018	07/01/2019
				06/01/2019	05/01/2020
				20/06/2019	19/06/2020
		11/12/2019		10/12/2020	
		10/11/2020		09/11/2021	
		20/10/2021		19/10/2022	
Backup meter		36056210		08/01/2018	07/01/2019
				06/01/2019	05/01/2020
				20/06/2019	19/06/2020
		0123716172		12/12/2019	11/12/2020
				10/11/2020	09/11/2021
				20/10/2021	19/10/2022

4.3 Monitoring Plan

1. Monitoring system and data collection

The electricity exported to the grid and imported from the grid by the project is continuously measured by the two bidirectional meters (one as main meter and one as backup meter) located at the output of the project site. The accuracy of the meters is 0.2S. The monthly cut-off time for electricity exported to the grid and imported from the grid by the project is at 00:00 on the penultimate day in every month. The manual records of the main meter are based on continuously measurement and monthly recorded by the Project Developer.

Monthly electricity exported to the grid and imported from the grid by the project is approved and signed off by the Manager before it is accepted and stored. The meter readings are also monitored and recorded on hourly basis and aggregated on monthly basis by the grid company. Electricity sales receipts of electricity exported to the grid and imported from the grid by the project are issued after the confirmation from the Grid Company and Project Developer. The net electricity supplied to grid by the project is calculated by the electricity exported to the grid minus the electricity imported from the grid.

The project developer will archive the data electronically until two years after the end of the crediting period, whichever occurs later.

Indicative electric connection diagram of the project is described as follow:

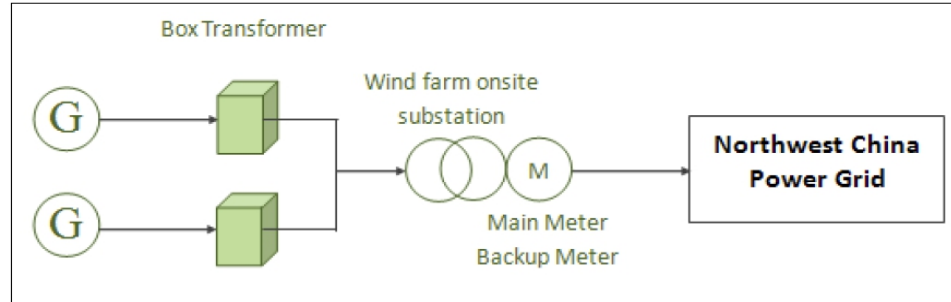


Figure 4 Indicative electric connection diagram of the project activity

2. Organizational structure and responsibility

The Project owner, Gansu CGN Wind Power Co., Ltd, takes the responsibility of the monitoring plan implementation.

The staffs from technology and financial departments undertake the monitoring tasks including watching metering equipments, collecting electricity data and completing records, checking and analyzing the data, archiving relevant records, reporting to company administrator or supervisor.

The concerned staffs had been trained on monitoring and measurement to ensure the implementation of this monitoring plan according to the requirements.

Organizing structure of the team is shown as figure 5:

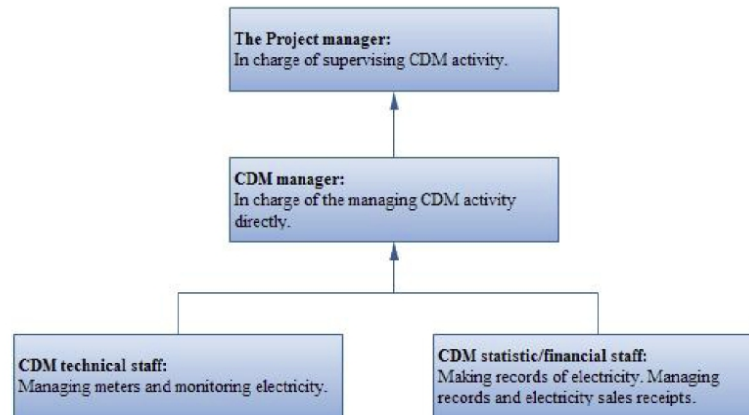


Figure 5 Organizing structure of the team

3. Quality assurance and quality control

Calibration of Meters has been implemented by the qualified third parties. No errors occurred during this monitoring period. And all the records could be documented and maintained by the project owner for DOE's verification.

The electricity exported to the grid and imported from the grid is monitored and recorded by the main meter that is bidirectional. The Project Developer and the Grid Company collect the meter readings on the account date and confirm the electricity sales receipts. Data measured by the meters had been cross checked using electricity sales receipts. The accuracy of the measurement is ensured through calibration by a qualified party. The accuracy of the meters reaches 0.2S.

Problem occurred in monitoring and measurement process will be recorded and reported to company administrator or supervisor. Consequently, the corrective resolution will be adopted to deal with that problem and to avoid it occur again in future.

4. Emergency procedures

Problem occurred in monitoring and measurement process will be recorded and reported to company administrator. Consequently, the corrective resolution will be adopted to deal with that problem and to avoid it occur again in future.

When the main meter or back-up meter have a breakdown, the electricity generation difference will be treated as follows:

- (1) When both meters are fine, the main meter will be used;
- (2) When one of the two meters has a breakdown, the readings of the other meter will be adopted;
- (3) If both the main meter and back-up meter have breakdowns, the project owner and Northwest China Power Grid shall jointly prepare a reasonable and conservative estimate of the

correct reading, and provide sufficient evidence that this estimation is reasonable and conservative.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

The baseline emission BE_y (tCO₂) during the monitoring period results from:

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

Where:

BE_y = Baseline emissions in year y (tCO₂/year)

EG_y = Net electricity supplied to the grid by the Project (MWh).

EF_{grid,CM,y} = Emission factor of the grid (tCO₂e /MWh) (0.7674tCO₂e /MWh, as calculated ex-ante in the registered PDD and will not be updated during the crediting period).

The net electricity exported by the project is calculated as below:

Monitoring Period		Electricity exported to the grid by calculation meter readings	Electricity exported to the grid by sales receipts	Electricity exported to the grid used for ER calculation
		A	B	C=MIN(A, B)
01/01/2019	29/01/2019	3,840.540	3,840.540	3,840.540
30/01/2019	26/02/2019	8,047.380	8,047.380	8,047.380
27/02/2019	29/03/2019	9,544.920	9,544.920	9,544.920
30/03/2019	28/04/2019	10,168.620	10,168.620	10,168.620
29/04/2019	29/05/2019	13,017.840	13,017.840	13,017.840
30/05/2019	28/06/2019	6,321.480	6,321.480	6,321.480
29/06/2019	29/07/2019	7,019.100	7,019.100	7,019.100
30/07/2019	29/08/2019	10,204.920	10,204.920	10,204.920
30/08/2019	28/09/2019	8,469.120	8,469.120	8,469.120
29/09/2019	29/10/2019	8,493.540	8,493.540	8,493.540
30/10/2019	28/11/2019	5,780.940	5,780.940	5,780.940
29/11/2019	29/12/2019	3,684.120	3,684.120	3,684.120
30/12/2019	31/12/2019	182.094	182.094	182.094
subtotal		94,774.614	94,774.614	94,744.614
01/01/2020	29/01/2020	3,055.800	3,055.800	3,055.800
30/01/2020	27/02/2020	6,266.700	6,266.700	6,266.700

28/02/2020	29/03/2020	9,170.700	9,170.700	9,170.700
30/03/2020	28/04/2020	12,068.364	12,068.364	12,068.364
29/04/2020	29/05/2020	12,825.120	12,825.120	12,825.120
30/05/2020	28/06/2020	7,570.860	7,570.860	7,570.860
29/06/2020	29/07/2020	7,892.940	7,892.940	7,892.940
30/07/2020	29/08/2020	9,393.120	9,393.120	9,393.120
30/08/2020	28/09/2020	9,201.720	9,201.720	9,201.720
29/09/2020	29/10/2020	6,926.040	6,926.040	6,926.040
30/10/2020	28/11/2020	6,492.420	6,492.420	6,492.420
29/11/2020	29/12/2020	3,729.660	3,729.660	3,729.660
30/12/2020	31/12/2020	132.000	132.000	132.000
subtotal		94,725.444	94,725.444	94,725.444
01/01/2021	29/01/2021	3,916.440	3,916.440	3,916.440
30/01/2021	26/02/2021	5,969.700	5,969.700	5,969.700
27/02/2021	29/03/2021	9,197.760	9,197.760	9,197.760
30/03/2021	28/04/2021	8,864.394	8,864.394	8,864.394
29/04/2021	29/05/2021	7,965.936	7,965.936	7,965.936
30/05/2021	28/06/2021	7,430.478	7,430.478	7,430.478
29/06/2021	29/07/2021	8,870.334	8,870.334	8,870.334
30/07/2021	29/08/2021	8,256.666	8,256.666	8,256.666
30/08/2021	28/09/2021	6,340.158	6,340.158	6,340.158
29/09/2021	29/10/2021	8,740.974	8,740.974	8,740.974
30/10/2021	28/11/2021	2,200.704	2,200.704	2,200.704
29/11/2021	29/12/2021	2,546.016	2,546.016	2,546.016
30/12/2021	31/12/2021	552.090	552.090	552.090
subtotal		80,851.650	80,851.650	80,851.650
Total				270,351.708

Monitoring Period		Electricity imported from the grid by calculation meter readings (MWh)	Electricity imported from the grid by sales receipts (MWh)	Electricity imported from the grid used for ER calculation (MWh)
		D	E	F=MAX(D,E)
01/01/2019	29/01/2019	29.370	29.370	29.370
30/01/2019	26/02/2019	31.416	31.416	31.416
27/02/2019	29/03/2019	47.454	47.454	47.454
30/03/2019	28/04/2019	28.446	28.446	28.446
29/04/2019	29/05/2019	34.254	34.254	34.254
30/05/2019	28/06/2019	24.222	24.222	24.222
29/06/2019	29/07/2019	27.324	27.324	27.324

30/07/2019	29/08/2019	34.254	34.254	34.254
30/08/2019	28/09/2019	56.166	56.166	56.166
29/09/2019	29/10/2019	39.600	39.600	39.600
30/10/2019	28/11/2019	29.568	29.568	29.568
29/11/2019	29/12/2019	34.056	34.056	34.056
30/12/2019	31/12/2019	5.940	5.940	5.940
subtotal		422.070	422.070	422.070
01/01/2020	29/01/2020	32.802	32.802	32.802
30/01/2020	27/02/2020	51.612	51.612	51.612
28/02/2020	29/03/2020	40.260	40.260	40.260
30/03/2020	28/04/2020	30.756	30.756	30.756
29/04/2020	29/05/2020	21.780	21.780	21.780
30/05/2020	28/06/2020	31.680	31.680	31.680
29/06/2020	29/07/2020	36.960	36.960	36.960
30/07/2020	29/08/2020	34.320	34.320	34.320
30/08/2020	28/09/2020	19.140	19.140	19.140
29/09/2020	29/10/2020	42.240	42.240	42.240
30/10/2020	28/11/2020	64.680	64.680	64.680
29/11/2020	29/12/2020	121.440	121.440	121.440
30/12/2020	31/12/2020	6.336	6.336	6.336
subtotal		534.006	534.006	534.006
01/01/2021	29/01/2021	90.684	90.684	90.684
30/01/2021	26/02/2021	63.360	63.360	63.360
27/02/2021	29/03/2021	46.068	46.068	46.068
30/03/2021	28/04/2021	31.284	31.284	31.284
29/04/2021	29/05/2021	30.426	30.426	30.426
30/05/2021	28/06/2021	31.284	31.284	31.284
29/06/2021	29/07/2021	33.858	33.858	33.858
30/07/2021	29/08/2021	33.528	33.528	33.528
30/08/2021	28/09/2021	36.564	36.564	36.564
29/09/2021	29/10/2021	31.548	31.548	31.548
30/10/2021	28/11/2021	73.920	73.920	73.920
29/11/2021	29/12/2021	93.390	93.390	93.390
30/12/2021	31/12/2021	7.920	7.920	7.920
subtotal		603.834	603.834	603.834
Total				1,559.910

Net Electricity supplied to the NWPG by the project:

Period	Electricity exported to the grid EG _{export} (MWh)	Electricity imported from the grid EG _{import} (MWh)	Net electricity supplied to the grid by the Project EG _y (MWh)
Year 2019	94,774.614	422.07	94,352.544
Year 2020	94,725.444	534.006	94,191.438
Year 2021	80,851.65	603.834	80,247.816
Total	2703,51.708	1,559.910	268,791.798

Baseline emission of the project:

Period	Baseline emissions (tCO ₂ e/MWh) (BE _y)
Year 2019	72,406
Year 2020	72,282
Year 2021	61,582
Total	206,270

Therefore, the baseline emissions $BE_y = EG_y \times EF_{grid,CM,y} = 268,791.798 \times 0.7674 = 206,270$ tCO₂e

5.2 Project Emissions

According to registered CDM PDD, the project is a GHG zero-emission electricity generating activity; therefore, no project emissions from the project activity were identified $PE_y = 0$.

5.3 Leakage

According to registered CDM PDD, the project needn't consider leakages, i.e., $LE_y = 0$.

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)
Year 2019	72,406	0	0	72,406
Year 2020	72,282	0	0	72,282

Year 2021	61,582	0	0	61,582
Total	206,270	0	0	206,270

This monitoring period started from 01/01/2019 to 31/12/2021, with totally 1,096 days. The annual average emission reductions estimated in the registered CDM PDD is 88,361 tCO₂e, so the amount of emission reductions for this monitoring period would be 88,361 tCO₂e/365d×1,096d =265,325 tCO₂e. Because of wind curtailment by the local grid dispatching to ration the power supply, electricity exported to the grid during this monitoring period is far below estimation. Hence, the actual emission reductions in this monitoring period (1,096 days) are 206,270 tCO₂e, which is 22.26% less than the estimation in the registered PD.