



GANSU GUAZHOU BEIDAQIAO WIND POWER PROJECT

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Project Title	Gansu Guazhou Beidaqiao Wind Power Project
Version	02
Report ID	126
Date of Issue	23-Apr-2023
Project ID	873
Monitoring Period	22-Jan-2021 to 31-Dec-2022
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1 PROJECT DETAILS

1.1 Summary Description of the Implementation Status of the Project

Gansu Guazhou Beidaqiao Wind Power Project (hereafter referred as the project) is located in Guazhou County, Jiuquan City, Gansu Province. Totally 134 sets of 1500kW wind turbines have been installed, providing a total capacity of 201MW. The purpose of the project is to generate electricity using zero- emission wind resources and supply it to Northwest China Power Grid. In the registration PDD, the project was estimated to deliver 374,627 tones of CO₂e emission reduction annually with an average annual electricity generation of 480,708 MWh.

The implementation of the project will achieve CO₂ emission reductions by replacing electricity generated by fossil fuel fired power plants. The purpose of the project is to generate zero-emission wind power and deliver it to Northwest China Power Grid. For the project, the scenario existing prior to the start of the implementation of the project activity is Northwest China Power Grid provides the same electricity service as the project. The baseline scenario is the same as the scenario existing prior to the start of implementation of the project activity.

The project began to construct on 28-November-2009, all the 134 sets of wind turbines started to trial-operate on 16-December-2010 and started exporting electricity to the grid on 22-January-2011 when the first group of wind turbines underwent 240 hours consecutive trail operation. All wind turbines had been put into full delivery since 01-February-2011.

During this monitoring period, the wind turbines are in good operation condition. The operation environment and status in this monitoring period hasn't been changed from the previous monitoring periods, which is also consistent with the description of the registered PDD. The emission reduction achieved by the project in this monitoring period (22-Jan-2021 to 31-Dec-2022) is 570,569tCO₂e.

Audit Type	Period	Program	VVB Name	Number of years
Validation	25-Aug-2010	VCS	Det Norske Veritas Certification Ltd.	/
Validation	25-Aug-2010	CDM	Det Norske Veritas Certification Ltd.	/

Verification	22-Jan-2011-04-Jul-2011	VCS	Det Norske Veritas Certification Ltd.	0.45 year
Verification	05-Jul-2011-29-Dec-2011	CDM	SGS United Kingdom Limited	0.49 year
Verification	30-Dec-2011-31-Dec-2012	CDM	SGS United Kingdom Limited	1 year
Verification	01-Jan-2013-31-Dec-2018	VCS	Shenzhen CTI International Certification Co., Ltd.	6 years
Verification	01-Jan-2019-21-Jan-2021	VCS	China Classification Society Certification Co., Ltd.	2.06 years
Validation	24-Oct-2022	VCS	Shenzhen CTI International Certification Co., Ltd.	/
Verification	22-Jan-2021 to 31-Dec-2022	VCS	China Testing & Certification International Group Co., Ltd.	1.94 years
Total	22-Jan-2011-31-Dec-2022	/	/	11.94 years

1.2 Sectoral Scope and Project Type

Sectoral scope: 1 energy industries (Renewable sources).

Project type: Grid connected wind power project.

The project is not a grouped project.

1.3 Project Proponent

Organization name	Longyuan (Jiuquan) Wind Power Co., Ltd.
Contact person	Kong Shujian
Title	Manager

Address	No.3-4-2, Xinzhouli Shopping Plaza, Yuanquan Town, Guazhou County, Jiuquan City, Gansu Province, China
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Email	shujian.kong@ceic.com.cn

1.4 Other Entities Involved in the Project

Organization name	Longyuan (Beijing) Carbon Asset Management Technology Co., Ltd.
Role in the Project	Consultancy
Contact person	Ma Qian
Title	General Manager
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1.5 Project Start Date

All the 134 sets of wind turbines of the project started to trial-operate on 16-December-2010 and started exporting electricity to the grid on 22-January-2011 when the first group of wind turbines underwent 240 hours consecutive trail operation. All wind turbines had been put into full delivery since 01-February-2011.

The GHG emission reductions of 110,255 tCO₂e generated 22-January-2011 to 04-July-2011 by the project has been issued as VCU's under VCS program. According to the website of Verra Registry¹, the project start date of project crediting period was on 22-January-2011 when the first group of wind turbines underwent 240 hours consecutive trail operation.

Thus, 22-January-2011 is regarded as the project start date.

¹ <https://registry.verra.org/app/projectDetail/VCS/873>

1.6 Project Crediting Period

In the renewal registered VCS PD, the second VCS crediting period is 22-January-2021 to 21-January-2031.

The project is also a registered CDM project (Ref.4832) with a 7*3 renewable project crediting period, the VCS issuance is not eligible for beyond the end of those 21 years. Furthermore, given that the VCS crediting period started on 22-January-2011 and the lifetime of the project is about 20 years. The total VCS crediting period was determined from 22-January-2011 to 21-January-2031, of which the first VCS crediting period is from 22-January-2011 to 21-January-2021 and the second VCS crediting period is from 22-January-2021 to 21-January-2031 (10 years).

1.7 Project Location

The project is located in Guazhou County, Jiuquan City, Gansu province of China. Four inflexions of geographical scopes are A (E96.257°, N40.674°), B (96.304°, N40.674°), C (E96.304°, N40.744°) and D (E96.257°, N40.744°). The detailed location of the project is shown in Figure 1.

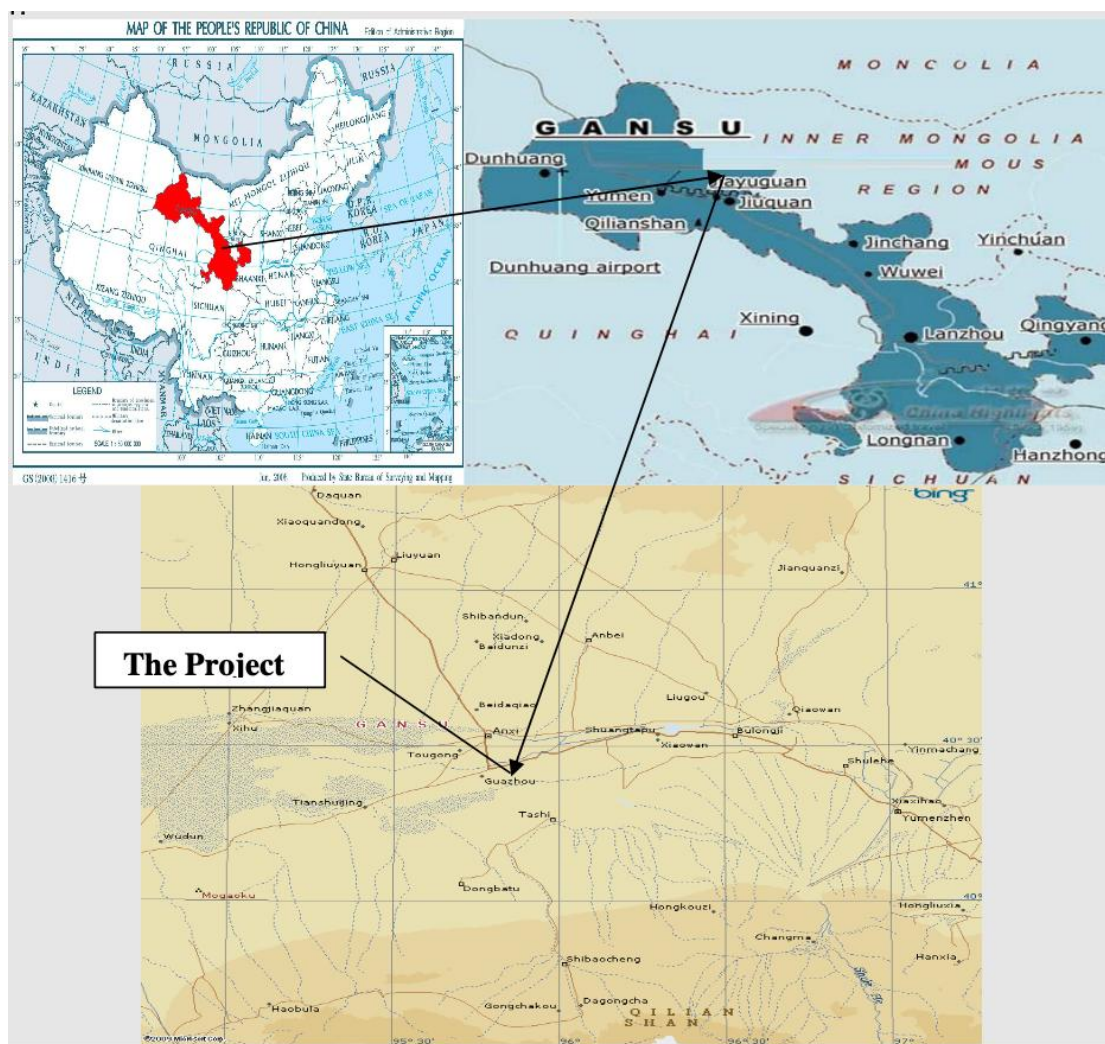


Figure 1. Location of the project

1.8 Title and Reference of Methodology

Title: The approved methodology applied in the project activity is ACM0002 (version 20.0) - "Grid-connected electricity generation from renewable sources"².

The methodology also refers to the approved versions of the following tools:

Tool to calculate the emission factor for an electricity system (version 07.0)³.

² <https://cdm.unfccc.int/methodologies/DB/XP2LKUSA61DKUQC0PIWPGWDN8ED5PG>

³ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-07-v7.0.pdf>

Baseline, project and/or leakage emissions from electricity consumption and monitoring of electricity generation (version 03.0)⁴.

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)⁵.

1.9 Participation under other GHG Programs

The project is a registered CDM project with reference No. 4832, the detailed information can be found at <https://cdm.unfccc.int/Projects/DB/DNV-CUK1305872143.32/view> .

Start Date	End Date	GHG Emission Reduction (tCO ₂ e)	Credit	Program
22-Jan-2011	04-Jul-2011	110,255	VCU	VCS
05-Jul-2011	29-Dec-2011	114,636	CER	CDM
30-Dec-2011	31-Dec-2012	298,623	CER	CDM
01-Jan-2013	31-Dec-2018	1,644,730	VCU	VCS
01-Jan-2019	21-Jan-2021	696,859	VCU	VCS

This is the fourth monitoring period under VCS program from 22-Jan-2021 to 31-Dec-2022 for the project. All emission reductions during this monitoring period have not and will not seek issuance under other kind of GHG programs. Emission reductions during this monitoring period will only seek issuance under VCS program.

1.10 Other Forms of Credit and Supply Chain (Scope 3) Emissions

Emission Trading Programs and Other Binding Limits

China has a national emissions trading scheme only cover the high-emission industries, such as thermal power generation, petrochemical, chemical, building materials, iron and steel, non-ferrous, paper, aviation and other key

⁴ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-05-v3.0.pdf>

⁵ <https://cdm.unfccc.int/methodologies/PAmethodologies/tools/am-tool-11-v3.0.1.pdf>

emission industries that emitted at least 26,000 tons of CO₂e/year, not including renewable project⁶.

Also, the project has not been registered as a CCER (Chinese Certified Emission Reductions) project in China, thus it is not eligible for emission reductions transaction under the China's ETS. Therefore, the project does not reduce GHG emissions from activities that are included in an emissions trading program or any other mechanism that includes GHG allowance trading. The net GHG emission reductions generated during this monitoring period have not been used for compliance under such programs or mechanisms.

Furthermore, as a voluntary emission reduction project, the GHG emission reductions and removals generated by the project will not be enforced to be used for compliance in China. The credits in this monitoring period (22/01/2021 to 31/12/2022) has not been counted and will not be counted under emission trading programs and other binding limits.

Other Forms of Environmental Credit

The project has not sought or received another form of GHG-related environmental credit, including renewable energy certificates, during this monitoring period.

Supply Chain (Scope 3) Emissions

The industrial chain of wind farms is mainly divided into upstream raw materials and parts manufacturing, midstream wind power machine manufacturing and downstream wind farm operation. Downstream operators are mainly investment operators, which allocate a certain proportion of clean energy when investing in electricity; The middle reaches are wind power equipment manufacturing; The upstream core components mainly include blades, towers, spindles, bearings, gearboxes, generators, flanges, hubs, towers, etc. The raw materials are mainly steel, carbon fiber, glass fiber and copper. The project proponent shall require the producers or retailers to post a public statement on their website. If the producer of the impacted good or service are known but not involved in the project or do not have a website, the project proponent shall notify them of the project and potential risk of Scope 3 emissions double claiming via email before 01-Jul-2023.

⁶ http://www.mee.gov.cn/xxgk/xxgk/xxgk05/202103/t20210330_826728.html

1.11 Sustainable Development Contributions

The Project is expected to produce various benefits to society as well as the environment. Therefore, the Project can significantly contribute to national as well as local sustainable development, including:

- **Job creation:** Implementation of the Project can generate employment opportunities. For the Project, a number of skilled workers were employed for operation and maintenance of the plant. The project activity generates long-term working opportunities for 30 people during the operation period. From the operation start date of this project activity to the end of this monitoring period, 30 people were employed including 15 females and 15 males.

Thus, the project achieved **SDG 8 Decent Work and Economic Growth**⁷.

- **Reduction in GHG emissions:** Currently, most of the electricity in the region is generated through conventional fossil fuel based thermal power plants, according to the China Electricity Power Yearbook. Through combustion of fossil fuels, they emit a large volume of Greenhouse gasses (GHG) into the atmosphere, which has a negative effect on global society. Generation of GHG emission free electricity, such as wind, can displace electricity generated by these fossil fuel based thermal plants, therefore reducing GHG emissions. The project activity achieves 570,569 tCO₂e emission reduction in this monitoring period.

Thus, the project achieved **SDG 13 Climate Action**⁸.

- **Reduction of fossil fuel use:** The Project reduces reliance on imported fossil fuels, which can contribute to increasing China's energy security, and also improve local air quality as it reduces the emissions of SO₂, and NO_x associated with fossil fuel use. During this monitoring period, 732,133.568 MWh of electricity from renewable sources had been exported to the power grid.

Thus, the project achieved **SDG 7 Affordable and Clean Energy**⁹.

⁷ <https://sdgs.un.org/goals/goal8>

⁸ <https://sdgs.un.org/goals/goal13>

⁹ <https://sdgs.un.org/goals/goal7>

Table 1: Sustainable Development Contributions

Row number	SDG Target	SDG Indicator	Net Impact on SDG Indicator	Current Project Contributions	Contributions Over Project Lifetime ¹⁰
1)	7.2	Renewable energy supplied to the power grid	Implemented activities to increase	732,133.568 MWh of electricity from renewable sources has been supplied to the power grid during the reporting period	An accumulated 3,376,513.558 MWh of electricity from renewable sources has been supplied to the power grid by end of the reporting period.
2)	8.5	Numbers of decent job opportunities provided by implementation of the project	Implemented activities to increase	30 people (15 males and 15 females) have been employed by the project as long-term employee which have an income rate higher than the local average level.	30 people (15 males and 15 females) have been employed by the project as long-term employee by end of the reporting period.
3)	13.0	Tonnes of greenhouse gas emissions avoided	Implemented activities to increase	The project has achieved a total GHG emission reduction of 570,569 tCO ₂ e during the reporting period.	An accumulated 3,022,413 tCO ₂ e of GHG emission reduction have been achieved by the project by end of the reporting period

¹⁰ The contributions over the project lifetime column are intended for displaying the cumulative SD contributions that have been accounted for and approved by Verra in an SD contributions report or VCS monitoring report. The contributions over the project lifetime is calculated by SD contributions in MPI (22-Jan-2011 to 04-Jul-2011) ,MPII (01-Jan-2013 to 31-Dec-2018),MPIII(01-Jan-2019 to 21-Jan-2021) and the current contributions in MPIV (22-Jan-2021 to 31-Dec-2022). The contributions from the verified CDM monitoring reports for the period 05-Jul-2011 to 31-Dec-2012 were not included in the cumulative impact.

2 SAFEGUARDS

2.1 No Net Harm

In accordance with relevant environmental law and regulations, the Environmental Impact Assessment Report of the project has been approved by the Environmental Protection Administration of Gansu Province on 06-August-2008. The project is likely to cause the following environmental impacts:

Impacts on Air Environment

Wind Power plants are known to contribute to zero atmospheric pollution as no fuel combustion is involved during any stage of the operation. The sources of air pollution are mainly due to the construction activities including the transportation of construction material, road construction and improvement and cadre construction etc. The impacts on air environment can be ended when the construction is completed. Several measures shall be taken into account, such as prohibiting the construction under strong wind weather, reducing as much as possible the area of construction, spraying water when undertaking construction, and reducing the speed of vehicles in the field. Hence, air pollution caused by the project is not significant to the surrounding environment.

Impacts on Noise Environment

The noise of the project in construction phase is from vehicles and machines on-site. According to the monitoring data from the construction site, the noise is at a level below 55 dB from the distance of 300m away from the construction site. The closest residential area to the site of the project is at least 5km away. Therefore, the noise of the project doesn't have impact on nearby residents.

Impacts on Water and Solid Waste

The wind-farm does not consume any water, nor does it generate any wastewater in the operation phase. The possible negative impacts are the household wastewater and solid waste produced by builders and staff, and the waste earth from digging of the foundation in the construction phase. Under normal conditions with highly automated monitoring and control system, the household wastewater is sprinkled to the construction road surface. Moreover, the amount of household solid waste is very little, which does not have impact on the environment. Besides, the solid waste is collected and moved to the landfill site of the nearest city. The waste earth from the digging should be firstly used for refilling. The rest of the waste earth should be placed in the low

area of the site and replanted with grass. Following the suggestion, the water and solid waste should have no significant impact on the environment.

Impacts on telecommunications and television transmissions

The transformers of the project were closed down in the metal box which cause little impact on the surrounding environment. The closest residential area to the site of the project is at least 5km away. Therefore, the electromagnetism of this project in the operation phase doesn't impact the production and daily life of nearby enterprises and residents.

Impacts on Ecosystem Environment

The wind power project is located in a barren and desolate area with sparse vegetation, exposed dust and high soil erosion. Moreover, the installed height of turbines is lower than the winged height of the birds. So, there are no significant impacts on migratory birds / endangered species in the region of the project activity. Therefore, the activities to be carried out doesn't generate any negative impact on the ecological environment.

Socio-Economic Impacts

The project is estimated to supply annually 480,708MWh of power to the Gansu Power Grid and to save fossil fuel. So, the project generates eco-friendly, GHG free power that contributes to sustainable development of the region. Moreover, the project activity not only helps the uplift of skilled and unskilled manpower in the region, but also improves employment rate and livelihood of local populace in the vicinity of the project.

2.2 Local Stakeholder Consultation

2.2.1 Stakeholder consultation during registration stage under CDM scheme

1. Brief description how comments by local stakeholders have been invited and compiled:

According to the requirement by the Measures for Operation and Management of Clean Development Mechanism Projects in China and PDD, the staff of Longyuan (Jiuquan) Wind Power Co. Limited held an open public survey during Sept. 2009 and a stakeholders' conference on the local villagers and residents on 20th Sept. 2009. In order to invite comments from local stakeholders, a bulletin was published by the project owner on the bulletin boards in several Towns around the project, providing a detailed introduction of the project, CDM, and the stakeholder meeting. As supplement, the project owner also made telephone calls to the relevant organizations to ensure that they know about the project and the stakeholder meeting.

1) Symposium

On 20-September-2009, under the support of local government, the project owner successfully held a stakeholder s' meeting in Guazhou County. 12 stakeholder representatives participated the meeting, respectively from the Development and Reform Bureau of Guazhou County, the Environmental Protection Bureau, the local Power Grid Corporation and local residents. The project participants informed them about the project, asked for their comments on the project concerning socio-economic and environmental aspects, namely as follows,

- Impact on the economic aspect, including the local economy, income and employment, etc;
- Impact on the environmental aspect, including the ecological environment, air, noise and the impact of soil erosion, etc;
- Impact on sustainable development;
- Suggestions and recommendations on the project;
- Attitude to the implementation of the project, whether or not to support.

2) Questionnaire

The project participants have also carried out a public survey on the project in the format of questionnaires. Aimed to the dispersive characteristic of stakeholders in the project, the visiting and the investigational way had been used to invite the stakeholders. Moreover, to make sure the results more representative, all these informants came from nearby areas and covered different ages and occupations.

2. Summary of the comments received:

1) Summary of the comments received in the symposium:

- The project has been approved by the National Energy Bureau, Development and Environmental Protection Bureau of Gansu Province, which shows that the construction and operation of the project has little impacts on the local environment.
- All the stakeholder representatives believe that the project can achieve CO₂ emission reduction by replacing electricity generated by fossil fuel fired power plants connected into Northwest Power Grid, and the project has contribute to the mitigation of the GHG emissions.
- All the stakeholder representatives believe that the project have positive impacts on economy, environment and social in local region.
- The local government highly supports the project, and expects the increase of local financial incoming, which can provide more public health services and rebuild schools, etc.

- All stakeholders think that the project improves the life quality of local residents, such as, providing more employment opportunities for local residents, increasing incomes of the local residents, increasing revenues from tourism with the wind farm as a beautiful landscape, accelerate the development of local service industry, and tourism.
- All stakeholders think that the project activity has no significant negative influence on local environment.
- All the stakeholder representatives support and welcome the project.

2) Public survey results:

Totally 30 questionnaires returned out of 30 with a 100% response rate. Of the 30 respondents, 17 persons are male, and 13 persons are female.

Summary views on the questionnaires:

- 90% of the informants have known about the project.
- 100% of the informants live or work 1000m away from the project.
- 100% of the informants are satisfied with the local environment.
- 100% of the informants believe that the project has positive impacts on economy, environment or social in local region.
- 100% of the informants believe that the implementation of the project improves the life quality of local residents, by providing more employment opportunities for local residents, or increasing incomes of the local residents, etc.
- 100% of the informants think that the project participants should pay attention to solid waste, noise in the implementation of the project. In this regard, the project participants was in strict accordance with the environmental impact assessment and take environmental protection measures to ease the impact of the environment.
- 100% of the informants support and welcome the project, no negative comments were received.

In conclusion, being as a typical type of clean renewable energy, the project has no significant impacts on local environment and greatly contribute to achievement of sustainable development objective, thus all the stakeholder representatives give no negative comments and support and welcome the project.

Report on how due account was taken of any comments received:

Since there is no negative comment received, it's no need to make adjustment on design, construction and operation of the project. However, to reduce the impacts on the local environment produced by the construction of the project, the project owner should guarantee and suitably add the investment of environmental protection. At the same time, the construction processes should be strictly implemented according to the national environment criterions.

2.2.2 Stakeholder consultation during this monitoring period

Communications with local stakeholders are being carried out at periodic intervals. In this monitoring period, the project owner carried out questionnaire survey for the local stakeholder to collect the relevant comments and suggestions in Jul 2021 and Sep 2022. And 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

Not applicable.

3 IMPLEMENTATION STATUS

3.1 Implementation Status of the Project Activity

The project began to construct on 28-November-2009, all the 134 sets of wind turbines started to trial-operate on 16-December-2010. And all wind turbines have been put into full delivery on 01-February-2011. The project is to generate electricity using zero-emission wind resources and supply it to Northwest China Power Grid.

During this monitoring period, the project had a smooth data transfer and good grid connection, and no special events happened. No events or situations occurred during the monitoring period, which may impact the applicability of the methodology.

Totally 134 wind turbines produced by Sinovel Wind Group Co., Ltd. with a nominal capacity of 1500 KW was installed, providing a total capacity of 201MW. The main technical specifications are as follows:

Table 2: Technical Characteristics of Wind Turbines for the Project

Preliminary Design Data	
Number	134
Manufacturer	Sinovel Wind Group Co., Ltd.
Nominal Capacity	1500KW
Rotor	
Number of Blades	3
Cut-in Wind Speed	3m/s

Rated Wind Speed	10.5m/s
Cut-out Wind Speed	25m/s
Extreme Wind Speed	59.5m/s
Generator	
Rated Power	1500KW
Rated Voltage	690V
Lifetime	20y
PLF	27.31%

Each turbine has a 690V-to-35kV transformer, from which a 35kV line links into the 330kV step-up substation, which has been constructed by other previous project. By the 330 kV overhead transmission line, the electricity generated by the project are delivered to the power grid.

The inspect system of wind turbines consists of on-site controlling system, central computer system and communication network. The step-up substation has been constructed by other previous project so that the inspect system of transmission facility has not been considered in this project. The electricity supplied to the power grid is measured by the electronic meters installed at the substation.

During this monitoring period, the project had a smooth data transfer and good grid connection, and no special events happened. No events or situations occurred during the monitoring period, which may impact the applicability of the methodology.

3.2 Deviations

3.2.1 Methodology Deviations

There is no methodology deviation for the project.

3.2.2 Project Description Deviations

In the registered VCS PD, the crediting period is described as from 22-January-2011 to 4-July- 2011. The project is registered under VCS Standard Version 2007.1 and completed validation before 19-March-2020. Thus, it remains eligible to apply the crediting period requirements under VCS Standard Version 3, which shall be a maximum of ten years and may be renewed at most twice. Hence, the first renewable crediting period of the project has been updated from 22-January-2011 - 4-July- 2011 to 22-January-2011 - 21-January-2021.

As a CDM project with a 7*3 renewable project crediting period, the VCS issuance is not eligible for beyond the end of those 21 years. Furthermore, given that the VCS crediting period started on 22-January-2011 and the lifetime of the project is about 20 years, thus, the VCS crediting period will end on the 21-January-2031.

There are no project description deviations applied during this monitoring period.

3.3 Grouped Projects

The Project is not a grouped project.

4 DATA AND PARAMETERS

4.1 Data and Parameters Available at Validation

The parameter that is available at validation of registered PDD, The parameter is used to calculate $EF_{grid,CM,y}$.

Data / Parameter	$EF_{grid,OM,y}$
Data unit	tCO ₂ e/MWh
Description	Simple operating margin emission factor for Northwest China Power Grid
Source of data	"2019 Baseline Emission Factors for Regional Power Grids in China" published by China DNA
Value applied	0.8922
Justification of choice of data or description of measurement methods and procedures applied	Calculated as per the latest version of "Tool to calculate the emission factor for an electricity system" (version 07.0)
Purpose of Data	Calculation of $EF_{grid,CM,y}$
Comments	Calculated ex ante and fixed for the second crediting period

Data / Parameter	$EF_{grid,BM,y}$
Data unit	tCO ₂ e/MWh
Description	Build margin emission factor for Northwest China Power Grid
Source of data	"2019 Baseline Emission Factors for Regional Power Grids in China" published by China DNA
Value applied	0.4407
Justification of choice of data or description of measurement methods and procedures applied	Calculated as per the latest version of "Tool to calculate the emission factor for an electricity system" (version 07.0)
Purpose of Data	Calculation of $EF_{grid,CM,y}$
Comments	Calculated ex ante and fixed for the second crediting period

Data / Parameter	ω_{OM}
Data unit	-
Description	Weighting of operating margin emissions factor
Source of data	"Tool to calculate the emission factor for an electricity system" (version 07.0)
Value applied	0.75
Justification of choice of data or description of measurement methods and procedures applied	$w_{OM}=0.75$ and $w_{BM}=0.25$ for wind and solar power generation project activities as per Tool to calculate the emission factor for an electricity system (version 07.0)
Purpose of Data	Calculation of $EF_{grid,CM,y}$
Comments	Calculated ex ante and fixed for the second crediting period

Data / Parameter	ω_{BM}
Data unit	-
Description	Weighting of build margin emissions factor
Source of data	"Tool to calculate the emission factor for an electricity system" (version 07.0)
Value applied	0.25
Justification of choice of data or description of measurement methods and procedures applied	$w_{OM}=0.75$ and $w_{BM}=0.25$ for wind and solar power generation project activities as per Tool to calculate the emission factor for an electricity system (version 07.0)
Purpose of Data	Calculation of $EF_{grid,CM,y}$
Comments	Calculated ex ante and fixed for the second crediting period

Data / Parameter	$EF_{grid,CM,y}$
Data unit	tCO ₂ e/MWh
Description	Baseline emission factor: the combined emission factor of the project grid system.
Source of data	Registered PD
Value applied	0.779325
Justification of choice of data or description of measurement methods and procedures applied	Fixed before registration
Purpose of Data	Calculation of baseline emissions
Comments	The emission factor of the Project was ex-ante determined and is fixed during the second 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 plant to the grid in year y								
Source of data	Measured by electricity meters M1 and M2								
Description of measurement methods and procedures to be applied	$EG_{facility,y}$ should be calculated based on the direct measurement result of the electricity exported to the grid ($EG_{export,y}$) and the electricity imported from the grid ($EG_{import,y}$) The calculation of this parameter is shown as below: $EG_{facility,y} = EG_{export,y} - EG_{import,y}$								
Frequency of monitoring/recording	Continuously measuring and monthly recording								
Value applied	<table border="1"> <thead> <tr> <th>Period</th><th>Value</th></tr> </thead> <tbody> <tr> <td>22-Jan-2021~31-Dec-2021</td><td>369,144.288</td></tr> <tr> <td>01-Jan-2022~31-Dec-2022</td><td>362,989.340</td></tr> <tr> <td>Total</td><td>732,133.568</td></tr> </tbody> </table>	Period	Value	22-Jan-2021~31-Dec-2021	369,144.288	01-Jan-2022~31-Dec-2022	362,989.340	Total	732,133.568
Period	Value								
22-Jan-2021~31-Dec-2021	369,144.288								
01-Jan-2022~31-Dec-2022	362,989.340								
Total	732,133.568								
Monitoring equipment	Measured by Bi-directional meters M1 and M2 installed at two loops in the onsite Substation. The monitoring result is the sum of the measured values of the two meters. (Refer to Table 3 below for the detailed Meters' information and calibration record).								
QA/QC procedures to be applied	The Meters used for reading have been calibrated as per industry standards of host country. The metering equipments are calibrated by qualified institute annually and checked periodically for accuracy according to Chinese electric industry regulation. ETNs are used to cross check the consistency of the measured data.								
Purpose of data	Calculation of baseline emissions								
Calculation method	Calculated via equation: $EG_{facility,y} = EG_{export,y} - EG_{import,y}$ Where: $EG_{export,y}$ is the quantity of electricity generation								

	supplied by the project plant to the grid $EG_{import,y}$ is the quantity of electricity imported from the grid by the project
Comments	-

Data / Parameter	$EG_{export,y}$								
Data unit	MWh/yr								
Description	Quantity of electricity generation supplied by the project plant to the grid in year y								
Source of data	Measured electricity meters installed in the substation								
Description of measurement methods and procedures to be applied	$EG_{export,y}$ is measured by bi-directional meters M1 and M2 installed at the two loops of the project. The readings of the electricity meters are continuously measured and at least monthly recorded.								
Frequency of monitoring/recording	Continuously measuring and monthly recording								
Value applied	<table border="1"> <thead> <tr> <th>Period</th><th>Value</th></tr> </thead> <tbody> <tr> <td>22-Jan-2021~31-Dec-2021</td><td>370,131.838</td></tr> <tr> <td>01-Jan-2022~31-Dec-2022</td><td>363,942.140</td></tr> <tr> <td>Total</td><td>734,073.978</td></tr> </tbody> </table>	Period	Value	22-Jan-2021~31-Dec-2021	370,131.838	01-Jan-2022~31-Dec-2022	363,942.140	Total	734,073.978
Period	Value								
22-Jan-2021~31-Dec-2021	370,131.838								
01-Jan-2022~31-Dec-2022	363,942.140								
Total	734,073.978								
Monitoring equipment	Measured by Bi-directional meters M1 and M2 installed at two loops in the onsite Substation. The monitoring result is the sum of the measured values of the two meters. (Refer to Table 3 below for the detailed Meters information and calibration record).								
QA/QC procedures to be applied	The meters are calibrated annually for accuracy by a qualified third party in accordance with industry standards. Electricity exported to the grid were double checked by sales evidences, such as electricity transaction notes (ETN). The data have been archived electronically and kept during the creating period and 2 years after.								

Purpose of data	Baseline emission calculation
Calculation method	N/A
Comments	-

Data / Parameter	EG _{import,y}								
Data unit	MWh/yr								
Description	Quantity of electricity imported from the power grid by the project in year y								
Source of data	Measured electricity meters installed in the substation								
Description of measurement methods and procedures to be applied	EG _{import,y} is measured by bi-directional meters M1 and M2 installed at the two loops of the project. The readings of the electricity meters are continuously measured and at least monthly recorded.								
Frequency of monitoring/recording	Continuously measuring and monthly recording								
Value applied	<table border="1"> <tr> <th>Period</th><th>Value</th></tr> <tr> <td>22-Jan-2021~31-Dec-2021</td><td>987.610</td></tr> <tr> <td>01-Jan-2022~31-Dec-2022</td><td>952.800</td></tr> <tr> <td>Total</td><td>1940.410</td></tr> </table>	Period	Value	22-Jan-2021~31-Dec-2021	987.610	01-Jan-2022~31-Dec-2022	952.800	Total	1940.410
Period	Value								
22-Jan-2021~31-Dec-2021	987.610								
01-Jan-2022~31-Dec-2022	952.800								
Total	1940.410								
Monitoring equipment	Measured by Bi-directional meters M1 and M2 installed at two loops in the onsite Substation. The monitoring result is the sum of the measured values of the two meters. (Refer to Table 3 below for the detailed Meters information and calibration record).								
QA/QC procedures to be applied	The meters are calibrated annually for accuracy by a qualified third party in accordance with industry standards. Electricity imported from the grid were double checked by sales evidences, such as electricity transaction notes (ETN). The data have been archived electronically and kept during the creating period and 2 years after.								
Purpose of data	Baseline emission calculation								

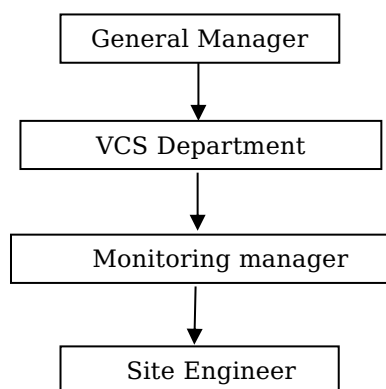
Calculation method	N/A
Comments	-

4.3 Monitoring Plan

Monitoring plan is a division and schedule of a series of monitoring tasks. Monitoring tasks must be implemented according to the monitoring plan in order to ensure that the real, measurable and long-term greenhouse gas (GHG) emission reduction for the project is monitored and reported.

1. Management Structure

The management structure is as follows:



The general manager is in charge of decision-making on major VCS issues, the VCS department is responsible for the concrete implementation of the Monitoring Plan. The monitor manager is responsible for supervising and checking the whole data record process and the calibration of meters. Another main task of the monitor manager is facilitating the verification through providing the VVB with all required necessary information. The site engineers collect monitoring data (e.g. electric meter data) and keep invoices of sales, etc.

2. Training

Longyuan (Jiuquan) Wind Power Co. Ltd assigns and trains the dedicated people carrying out the monitoring work. The monitoring personnel training by the contacted VCS consult company has been completed before the registration, further training work has been completed with the preliminary verification

3. Calibration and Arrangement of Meters

An agreement has been signed between the project owner and Power Grid Company that defines the metering arrangements and the required quality control procedures to ensure accuracy.

- * For the project, all the wind turbines are divided into two loops to parallel-connect with a junction line to new adding transformer shared with other planning wind projects.

- * Two meters are installed at two loops to monitor the electricity generation (accuracy degree is 0.2S, bidirectional).

- * The metering equipment for electricity has been properly configured and calibrated. The metering equipment has been checked by the project owner and Power Grid Company before operation.

- * The verification of electric energy meter has been periodically carried out according to relevant national electric industry standards or regulations. After verification, meters have been sealed. Meters have been jointly inspected and sealed on behalf of the parties concerned and have not been accessible by either party except in the presence of the other party or its accredited representatives.

- * All the metering equipment for electricity installed has been tested by the qualified metrical agency co-authorized by the project owner and Power Grid Company, after:

- 1) The detection of a difference larger than the allowable error in the reading of meters, when considering the reactive loss of electrical wire;

- 2) The need for repair or replacement due to the damage of the meters in whole or in parts in accordance with the specifications.

- * The project owner and Power Grid Company should have a remedial measure for the estimation of the correct reading according to agreed procedures under the signed agreement.

4. Monitoring parameters

All relevant parameters have been monitored according to the methodology requirements and description of measurement methods and procedures to be applied. The net electricity supplied the grid is measured continuously and recorded monthly as required by the methodology applied. The data and meter reading are well documented and be readily accessible for VVB.

5. Data recording

The project owner and Power Grid Company are responsible for the operation of meters, to ensure that all meters are in good conditions. Under such circumstances, the specific steps for data collection and reporting are listed below:

- 1) The total electricity delivered to the grid by the project (EG_{export}) is continuously measured. The readings of the meter M1 and M2 installed at two loops are recorded by the project owner at 24:00 every day and then reports to the grid company monthly for confirmation purpose. The local grid company issues the ETNs monthly which is used to crosscheck the monthly recording data. According to the requirement of local grid company, the sales receipt of export to the grid through main line is recorded on 24:00 of the third last day of every month.
- 2) Electricity imported from the grid by the project (EG_{import}) is continuously measured. The readings of the meter M1 and M2 installed at two loops are recorded by the project owner at 24:00 every day and then reports to the grid company monthly for confirmation purpose. The local grid company issues the ETNs monthly which is used to crosscheck the monthly recording data. According to the requirement of local grid company, the sales receipt of export to the grid through main line is recorded on 24:00 of the 20th day of every month.
- 3) Project owner provides the meter's readings and ETNs to VVB for verification.

Should any previous months reading of the meter be inaccurate by more than the allowable error, or otherwise functioned improperly, the electricity generation supplied to the grid by the project shall be determined by:

- 1) The project owner and Power Grid Company shall jointly prepare an estimate of the correct reading; and provide ample evidence to VVB that the method is reasonable;
- 2) The meter reading shall be for backup usage;
- 3) If the project owner and Power Grid Company fail to agree the estimate of the correct reading, then the matter will be referred for arbitration according to agreed procedures.

The detail information about metering system was shown in diagram of monitoring system and table below:

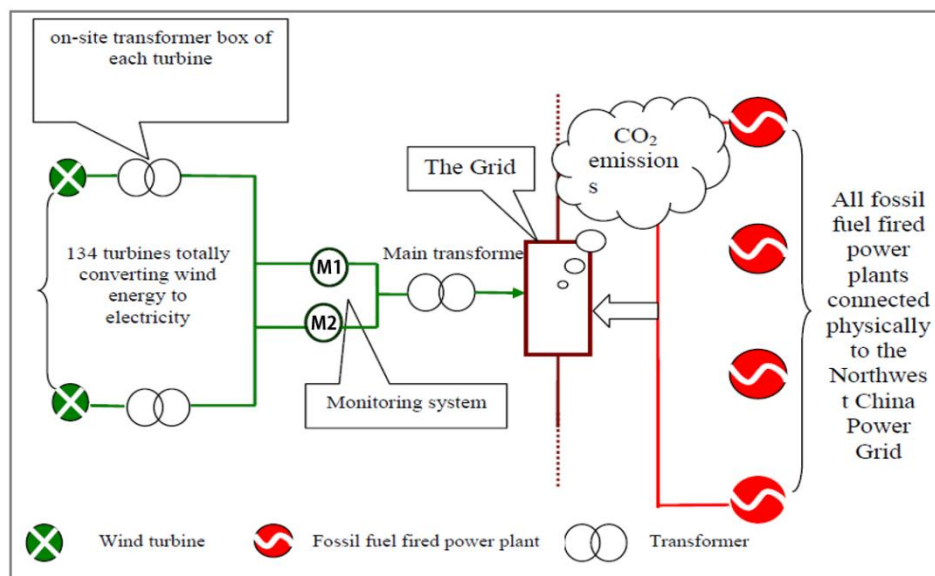


Figure 2. The monitoring system of the project

The metering equipments M1, M2 for the monitoring of $EG_{export,y}$ and $EG_{import,y}$ are calibrated annually for accuracy by a qualified third party in accordance with industry standards. The calibration record of the electricity measure-related meters can be found at Table 3.

Table 3. Calibration record of the meters

No.	Type	SN	Accuracy class	Required Calibration frequency	Calibration date	Calibration due on	Calibrated by
M1	bidirectional electricity meter	57034799	0.2S	Annually	03-Mar-2020 24-Feb-2021 07-Jan-2022	02-Mar-2021 23-Feb-2022 06-Jan-2023	Electric Energy Measurement Centre of State Grid Gansu Electric Power Corporation
M2	bidirectional electricity meter	57034801	0.2S	Annually	03-Mar-2020 24-Feb-2021 07-Jan-2022	02-Mar-2021 23-Feb-2022 06-Jan-2023	Electric Energy Measurement Centre of State Grid Gansu Electric Power Corporation
M1	bidirectional electricity meter	219216914	0.2S	Annually	05-Sep-2022	04-Sep-2023	Electric Energy Measurement Centre of State Grid Gansu Electric Power Corporation
M2	bidirectional electricity meter	219216910	0.2S	Annually	05-Sep-2022	04-Sep-2023	Electric Energy Measurement Centre of State Grid Gansu Electric Power Corporation

Due to meet the calibration requirements of Electric Energy Measurement Centre of State Grid Gansu Electric Power Corporation, the original meters M1and M2(serial No.53034799(M1) and No.57034801(M2)) were replaced by new

meters on 21 Sep 2022. The accuracy of the new meters (serial No.219216914(M1) and No.219216910(M2) are 0.2S and the same as the original meters.

6. Quality Assurance and Quality Control

The project activity has use high-precision monitoring equipment to monitor the electricity to the grid. All meters have been calibrated and sealed as per the industry practices at regular intervals. Hence, high quality is ensured. ETNs have been used to test the consistency of the recorded data.

7. Data Management System

All parameters monitored under the monitoring plan are archived electronically and be kept at least for 2 years after the end of last crediting period. The monitored data are presented to the verification agency or VVB to whom verification of emission reductions is assigned.

The documents in paper format, such as maps, tables, and the EIA report, have been used in conjunction with the monitoring plan to check the authenticity of the information, and be kept at least one copy by the project owner.

5 QUANTIFICATION OF GHG EMISSION REDUCTIONS AND REMOVALS

5.1 Baseline Emissions

According to ACM0002, the baseline emission BE_y during the monitoring period results from:

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

The Project is the installation of a new grid-connected renewable power plant at a site where no renewable power plant was operated prior to the implementation of the Project. So:

$$EG_{PJ,y} = EG_{facility,y}$$

Accordingly,

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

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

Where:

BE_y is the baseline emissions in year y (tCO_2/yr);

$EG_{PJ,y}$ is the quantity of net electricity generation that is produced and fed into the grid as a result of the implementation of the project activity in year y (MWh/yr);

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

$EG_{facility,y}$ is the quantity of net electricity generation supplied by the Project plant/unit to the grid in year y (MWh/yr).

$EG_{export,y}$ is the Electricity exported to the grid by the Project.

$EG_{import,y}$ is the Electricity imported from the grid by the Project.

The summary of $EG_{export,y}$ on the below Table 4:

Period	Electricity exported to the grid ($EG_{export,y}$) (MWh)				
	Values from meter readings			Values from ETNs	Conservative Value
	Meter (M1)	Meter (M2)	Total		
	A	B	C=A+B	D	E=Min (C, D)
22/01/2021-29/01/2021*	2,478.525	2,847.688	5,326.213	5,294.910	5,294.910
30/01/2021-26/02/2021	15,243.288	17,858.925	33,102.213	32,905.677	32,905.677
27/02/2021-29/03/2021	15,824.988	21,853.125	37,678.113	37,375.642	37,375.642
30/03/2021-28/04/2021	20,514.550	21,085.663	41,600.213	40,757.714	40,757.714
29/04/2021-29/05/2021	14,929.425	17,763.638	32,693.063	32,436.077	32,436.077
30/05/2021-28/06/2021	15,103.725	16,527.263	31,630.988	31,137.347	31,137.347
29/06/2021-29/07/2021	15,540.438	21,772.888	37,313.326	36,567.163	36,567.163
30/07/2021-29/08/2021	18,344.813	20,049.575	38,394.388	37,719.155	37,719.155
30/08/2021-28/09/2021	14,112.350	15,548.925	29,661.275	29,350.150	29,350.150
29/09/2021-29/10/2021	20,944.000	27,148.713	48,092.713	47,334.268	47,334.268
30/10/2021-28/11/2021	7,736.838	7,105.437	14,842.275	14,625.354	14,625.354
29/11/2021-29/12/2021	10,551.625	13,389.075	23,940.700	23,363.320	23,363.320
30/12/2021-31/12/2021*	409.587	880.687	1,290.274	1,265.061	1,265.061
Subtotal	171,734.152	203,831.602	375,565.754	370,131.838	370,131.838
01/01/2022-29/01/2022*	7565.600	11322.675	18,888.275	18,343.387	18,343.387
30/01/2022-26/02/2022	11527.338	13391.175	24,918.513	24,465.090	24,465.090
27/02/2022-29/03/2022	15293.688	17635.888	32,929.576	32,365.767	32,365.767
30/03/2022-28/04/2022	12390.088	13419.350	25,809.438	25,734.373	25,734.373
29/04/2022-29/05/2022	18089.838	26710.688	44,800.526	44,418.518	44,418.518
30/05/2022-28/06/2022	20220.200	19450.638	39,670.838	39,075.821	39,075.821
29/06/2022-29/07/2022	13921.075	16943.763	30,864.838	30,358.622	30,358.622
30/07/2022-29/08/2022	20335.088	23898.438	44,233.526	43,283.432	43,283.432
30/08/2022-28/09/2022	13693.225	16171.050	29,864.275	29,304.010	29,304.010
29/09/2022-29/10/2022	15596.875	18841.988	34,438.863	34,286.449	34,286.449

30/10/2022-28/11/2022	11959.500	14979.125	26,938.625	26,289.317	26,289.317
29/11/2022-29/12/2022	8058.750	8141.875	16,200.625	15,907.420	15,907.420
30/12/2022-31/12/2022*	38.500	74.375	112.875	109.934	109.934
Subtotal	168689.765	200981.028	369,670.793	363,942.140	363,942.140
Total	340423.917	404812.630	745,236.547	734,073.978	734,073.978

* According to the requirement of local grid company, the sales receipt of export to the grid is recorded on 24:00 of the third last day of every month. For the period from 22th to 29th in January 2021, 1st to 29th in January in January 2022, 30th to 31th in December during 2021-2022, the Power Grid Company issued the confirmation for $EG_{\text{export},y}$ of the project based on the meter reading of the meter M1 and M2.

The summary of $EG_{\text{import},y}$ on the below Table 5:

Period	Electricity imported from the grid ($EG_{\text{import},y}$) (MWh)				
	Values from meter readings			Values from sales evidence*	Conservative Value
	Meter (M1)	Meter (M2)	Total		
	A	B	C=A+B	D	E=Max(C,D)
22/01/2021-31/01/2021*	8.925	9.450	18.375	27.395	27.395
01/02/2021-20/02/2021	23.888	22.750	46.638	91.015	91.015
21/02/2021-20/03/2021	18.638	18.638	37.276	79.200	79.200
21/03/2021-20/04/2021	27.913	29.488	57.401	79.200	79.200
21/04/2021-20/05/2021	18.200	25.288	43.488	52.800	52.800
21/05/2021-20/06/2021	26.338	18.463	44.801	52.800	52.800
21/06/2021-20/07/2021	25.725	27.213	52.938	79.200	79.200
21/07/2021-20/08/2021	16.100	3.150	19.250	26.400	26.400
21/08/2021-20/09/2021	42.350	56.263	98.613	132.000	132.000
21/09/2021-20/10/2021	19.775	20.913	40.688	79.200	79.200
21/10/2021-20/11/2021	38.763	42.700	81.463	132.000	132.000
21/11/2021-20/12/2021	40.775	39.813	80.588	105.600	105.600
21/12/2021-31/12/2021*	11.900	12.075	23.975	50.800	50.800
Subtotal	319.290	326.204	645.494	987.610	987.610
01/01/2022-20/01/2022*	25.375	23.975	49.350	81.200	81.200
21/01/2022-20/02/2022	44.713	36.313	81.026	105.600	105.600
21/02/2022-20/03/2022	23.975	16.538	40.513	52.800	52.800
21/03/2022-20/04/2022	12.600	14.263	26.863	52.800	52.800
21/04/2022-20/05/2022	18.550	10.500	29.050	52.800	52.800
21/05/2022-20/06/2022	0.788	27.650	28.438	52.800	52.800
21/06/2022-20/07/2022	12.338	2.800	15.138	26.400	26.400
21/07/2022-20/08/2022	10.325	27.038	37.363	52.800	52.800
21/08/2022-20/09/2022	9.362	26.425	35.787	52.800	52.800
21/09/2022-20/10/2022	32.375	37.012	69.387	105.600	105.600
21/10/2022-20/11/2022	24.500	34.388	58.888	105.600	105.600
21/11/2022-20/12/2022	27.825	40.863	68.688	158.400	158.400
21/12/2022-31/12/2022*	18.638	17.763	36.401	53.200	53.200

Subtotal	261.364	315.528	576.892	952.800	952.800
Total	580.654	641.732	1222.386	1940.410	1940.410

* According to the requirement of local grid company, the sales receipt of export to the grid through main line is recorded on 24:00 of the 20th day of every month. For the period from 22th to 31th in January 2021, 1st to 20th in February 2021, 1st to 20th in January 2022, 21th to 31th in December during 2021-2022, the Power Grid Company issued the confirmation for $EG_{import,y}$ of the project based on the meter reading of the meter M1 and M2.

The baseline emission during this monitoring period calculated as following:

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

Table 6. Baseline emissions

Period	$EG_{facility,y}$ (MWh)	$EF_{grid,CM,y}$ (tCO _{2e} /MWh)	BE_y (tCO _{2e})
22-Jan-2021-31-Dec-2021	369,144.288	0.779325	287,683
01-Jan-2022-31-Dec-2022	362,989.340	0.779325	282,886
22-Jan-2021 to 31-Dec-2022	732,133.568	/	570,569

5.2 Project Emissions

Project emission (PE_y) is 0 tCO_{2e}.

5.3 Leakage

Project leakage is 0 tCO_{2e}.

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})
2021(22-Jan-2021-31-Dec-2021)	287,683	0	0	287,683
2022(01-Jan-2022-31-Dec-2022)	282,886	0	0	282,886
Total	570,569	0	0	570,569

The estimated annual emission reductions are 727,700 tCO₂e as registered PD. The monitoring period covers 709 days, $374,627 \text{ tCO}_2\text{e} * 709\text{days}/365\text{days}=727,700 \text{ tCO}_2\text{e}$, and the emission reduction achieved by the project in this monitoring period is 570,569 tCO₂e, less than the estimated emission reduction, which was mainly resulted by the erratically fluctuation of wind resources in the project area.

Comparison of actual emission reduction and the estimation in registered PDD

<u>Ex-ante emissions reductions/removals</u>	<u>Achieved emissions reductions/removals</u>	<u>Percent difference</u>	<u>Justification for the difference</u>
727,700	570,569	-21.59%	the erratically fluctuation of wind resources in the project area.

APPENDIX 1: <SUPPORTING EVIDENCE>

SDG Target 7.2, SDG Indicator 7.2.1 Renewable energy share in the total final energy consumption

period	Amount of renewable energy(MWh)	Data source
22-Jan-2011-04-Jul-2011	118,861.750	https://registry.terra.org/app/projectDetail/VCS/873
01-Jan--2013-31-Dec-2018	1,774,179.420	
01-Jan-2019-21-Jan-2021	751,338.820	
22-Jan-2021 to 31-Dec-2022	732,133.568	
Cumulative amount since operation start	3,376,513.558	/

SDG Target 13.0, SDG Indicator Tonnes of greenhouse gas emissions avoided or removed

period	Amount of emission reductions (tCO₂e)	Data source
22-Jan-2011-04-Jul-2011 (VER)	110,255	https://registry.terra.org/app/projectDetail/VCS/873
01-Jan-2013-31-Dec-2018 (VER)	1,644,730	
01-Jan-2019-21-Jan-2021 (VER)	696,859	
22-Jan-2021 to 31-Dec-2022(VER)	570,569	
Cumulative amount since operation start	3,022,413	/

SDG Target 8.3, SDG Indicator 8.3.1 Proportion of informal employment in non-agriculture employment, by sex

**龙源(酒泉)风力发电有限公司
桥东第三风电场员工花名册**



序号	单位	部门	姓名	性别	岗位	用工形式
1	龙源(酒泉)风力发电有限公司	桥东第三风电场	王建峰	男	运维班长	全日制
2	龙源(酒泉)风力发电有限公司	桥东第三风电场	王燕江	女	运维班长	全日制
3	龙源(酒泉)风力发电有限公司	桥东第三风电场	杨 飞	男	运检员	全日制
4	龙源(酒泉)风力发电有限公司	桥东第三风电场	公金兴	男	运检员	全日制
5	龙源(酒泉)风力发电有限公司	桥东第三风电场	严玉年	男	运检员	全日制
6	龙源(酒泉)风力发电有限公司	桥东第三风电场	罗 琼	女	组长	全日制
7	龙源(酒泉)风力发电有限公司	桥东第三风电场	张建荣	男	组长	全日制
8	龙源(酒泉)风力发电有限公司	桥东第三风电场	马兴海	男	组长	全日制
9	龙源(酒泉)风力发电有限公司	桥东第三风电场	张 宁	女	组员	全日制
10	龙源(酒泉)风力发电有限公司	桥东第三风电场	包继强	男	组员	全日制
11	龙源(酒泉)风力发电有限公司	桥东第三风电场	赵苗苗	女	组员	全日制
12	龙源(酒泉)风力发电有限公司	桥东第三风电场	陈宇非	女	组员	全日制
13	龙源(酒泉)风力发电有限公司	桥东第三风电场	李廷栋	男	组员	全日制
14	龙源(酒泉)风力发电有限公司	桥东第三风电场	牛 鹏	男	组员	全日制
15	龙源(酒泉)风力发电有限公司	桥东第三风电场	王秀田	女	组员	全日制
16	龙源(酒泉)风力发电有限公司	桥东第三风电场	李 博	女	组员	全日制
17	龙源(酒泉)风力发电有限公司	桥东第三风电场	尚新升	女	组员	全日制
18	龙源(酒泉)风力发电有限公司	桥东第三风电场	辛振刚	男	组员	全日制
19	龙源(酒泉)风力发电有限公司	桥东第三风电场	陈志宝	男	组员	全日制
20	龙源(酒泉)风力发电有限公司	桥东第三风电场	张维程	女	组员	全日制
21	龙源(酒泉)风力发电有限公司	桥东第三风电场	王 磊	男	组员	全日制
22	龙源(酒泉)风力发电有限公司	桥东第三风电场	袁 涛	男	组员	全日制
23	龙源(酒泉)风力发电有限公司	桥东第三风电场	陆 明	女	组员	全日制
24	龙源(酒泉)风力发电有限公司	桥东第三风电场	朱富强	男	员	全日制
25	龙源(酒泉)风力发电有限公司	桥东第三风电场	康 潇	女	组员	全日制
26	龙源(酒泉)风力发电有限公司	桥东第三风电场	王文琳	女	组员	全日制
27	龙源(酒泉)风力发电有限公司	桥东第三风电场	周 捷	女	组员	全日制
28	龙源(酒泉)风力发电有限公司	桥东第三风电场	漆 凯	男	组员	全日制
29	龙源(酒泉)风力发电有限公司	桥东第三风电场	梁婉珊	女	组员	全日制
30	龙源(酒泉)风力发电有限公司	桥东第三风电场	李 桥	女	组员	全日制